

REVISION OF THE AMYCTERIDES.

PART VI. *Acantholophus*.

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ACANTHOLOPHUS (Macleay) Schönh.

Schönherr. Mantissa Secunda Familiae Cureulionidum, 1847, p. 55.

Elongate, comparatively narrow, more ovate in female; size small to large.

Head with upper surface more or less deeply concave in front, with simple or compound crests above eyes. Rostrum short and thick, excavate above, clypeal plate sunk between the ends of the outer margins. Antennae long, slender. Eyes generally ovate, sometimes round, rather finely faceted. Prothorax more or less flattened above, lateral margins strongly explanate, and tuberculate, spinose or dentate, disc marked by three transverse impressions, the median only distinct at sides; generally with a distinctly marked median longitudinal area bounded on each side by a row of tubercles. Elytra subtruncate or emarginate at base, rounded or more or less produced at apex; more or less obscurely puncto-striate, the interstices granulate, the granules often obsolete; with 3 rows of tubercles in the majority of species, situated on the third, fifth and base of seventh interstices. Ventral surface in male feebly concave over basal segments, elsewhere flat or gently transversely convex; in female whole ventral surface convex. Anterior coxae sub-contiguous; tibiae sometimes with sexual characters; posterior tarsi always more or less elongate, never very short.

Type of genus, *Curculio marshami* Kirby.

The genus *Acantholophus* was formed by Schönherr for a number of species previously placed in *Amycterus* stirps 1a, and of which *marshami* was the type.

The name was, however, in use by previous authors for this group of species, and Macleay was quoted as the author; so that the name originally was probably a manuscript one. Mr. Sloane informs me that it appeared in Dejean's Catalogue, 1834, as *Acantholophus*, Macleay.

The first valid use of the name seems to have been by Guérin-Ménéville in the Voyage de la Coquille, II., p. 122 (183?),* and his remarks should be quoted in full:—

*The exact date of publication of the parts of Guérin's work appears doubtful, *vide infra* under *A. echinatus*.

"Genre *Acantholophe*, *Acantholophus*, Schon. manusc. Ce genre n'était pas encore publié quand nous avons donné cet article à l'impression, cependant M. Boisduval, chargé par M. Schoenherr de surveiller l'impression de l'ouvrage de ce savant nous a assuré qu'il était établi dans le manuscrit qui s'imprime actuellement (15 décembre 1833).

Le genre *Acantholophe* se rapproche beaucoup des *Amycterus* de Schönherr, mais ses antennes longues et greles l'en distinguent d'une manière bien nette."

These brief notes, though hardly a characterization of the genus, seem almost sufficient to validate the use of the name, provided that the identity of *A. echinatus* Guér. can be fixed. I cannot find, however, that the genus was described by Schönherr at this date, as stated by Guérin-Ménéville. In Schönherr's *Gen. et Spec. Curc.*, ii., published in 1834, which is presumably the work to which Guérin-Ménéville refers, *Curculio marshami* Kirby was redescribed by Gyllenhal, who placed it in the genus *Amycterus*.

In 1835 Boisduval (*Voy. de l'Astrolabe*, ii., pp. 369-371) referred two species to the genus—*marshami* and *echinatus*. He did not, however, characterize the genus beyond a short note.—"Les insectes de ce genre ont pour les caractères les plus grands rapports avec les *Amycterus* de Schönherr, et pour le facies une certaine ressemblance avec les *Sepidium*."

Owing to the uncertainty in regard to Guérin's date of publication, it is quite possible that Boisduval's use of the name will have priority.

The question of the date of the first use of the name is of some importance as Paseoc (*Journ. Linn. Soc., Zool.*, xii., 1873, p. 7) has pointed out that the name *Acantholophus* was utilized by Koch in 1837 for a genus of spiders, 10 years before Schönherr characterized the present genus. I hold, however, that Boisduval's use of the name for two species is sufficient to justify its adoption, even if the date of Guérin-Ménéville's publication is found to be later than the date of Koch's use of the name. If Guérin-Ménéville antedates Boisduval, the position is made more secure.

The first species described that can be assigned to this genus was *Curculio marshami* Kirby published in *Trans. Linn. Soc.*, xii., 1818, p. 436. Following this, two, if not more, species appear to have been described under the name of *Acantholophus echinatus* by Guérin-Ménéville (*Voy. de la Coquille*, ii., p. 122) and Boisduval (*Voy. de l'Astrolabe*, ii., 1835, p. 371). A full discussion of the use of the name is given later under *A. echinatus*.

Bohemann (*Schönh. Gen. Spec. Curc.*, vii., 1. (1843), pp. 72, 74-79) described 7 species, under the genus *Amycterus*, which were subsequently removed to *Acantholophus* when that genus was formally described by Schönherr in 1847 (*Mantissa Secunda Familiae Curculionidum*, p. 55). These species are *aureolus*, *bivittatus*, *dumosus*, *hypoleucus*, *hystrix*, *lateralis*, and *suturalis*.

In 1854, G. R. Waterhouse (*Trans. Ent. Soc.*, iii., part 2) described two new species, *adelaidae* and *planicollis*, and gave a table grouping together the known species of the genus, but also including under III. B. several species now placed in *Cubicorrhynchus*.

Lacordaire, in his work (*Gen. Coleopt.*, vi., p. 311, 1863), gave a lengthy description of the genus, without adding any new species to it. He also noted that several of the species ascribed to the genus might be better separated generically; the only one of these with which he was acquainted was *A. planicollis* Waterhouse. This and allied species I have in the present paper placed in a separate section of the genus. Macleay (*Trans. Ent. Soc. N.S. Wales*, i., 1865, pp. 270-290) described 22 new species,—*transitus*, *amycteroides*, *spinosus*, *crassidens*,

apicalis, *humeralis*, *echidna*, *denticollis*, *serraticollis*, *approximatus*, *spinifer*, *howittii*, *squalidus*, *truncaticornis*, *angasi*, *scabrosus*, *mucronatus*, *squamosus*, *Krefftii*, *tridentatus*, and *crenaticollis*. Later (*op. cit.*, 1866, pp. 327-330) he added 8 more species.—*mastersii*, *posticalis*, *rugiceps*, *irroratus*, *sublobatus*, *gravicollis*, *tribulus*, and *convexiusculus*. Of these 29 species, 10 must go down to synonymy; thus *spinus* = *lateralis* Bohem; *serraticollis* is but a variety of *denticollis* Mael.; *approximatus* and *angasi* are not specifically distinct from *adelaidae* Waterhouse; *howittii* is the other sex of *spinifer* Mael.; *squalidus* and *truncaticornis* are the same; *mastersii* and *posticalis* are founded on the sexes of the one species; *rugiceps* = *aureolus* Bohem; *irroratus* = *crenaticollis* Mael.; *sublobatus* is founded on the females of *adelaidae* and *squamosus*. One—*convexiusculus*—must be removed from the genus, and I would place it tentatively in *Hyborrhynchus*. In addition to the above, two species described by Macleay as *Cubicorhynchus* must be placed in *Acantholophus*; *eximius* has already been referred there by Lea, and in the present paper I have placed *C. marimus* Mael. in *Acantholophus*. In addition, Macleay reviewed the previously described species and divided the genus into groups.

In 1873, Pascoe (*Journ. Linn. Soc., Zool.*, xii. (1876), pp. 6-7) added the names of 3 species.—*gladiator*, *nasicornis* and *simplex*; of these, *nasicornis* is little more than a variety of *A. aureolus* Bohem. Sloane, in the Scientific Results of the Elder Expedition (*Trans. Roy. Soc. S. Aust.*, xvi., 1892, p. 231), described one new species.—*granulatus*. This name had previously been listed by Schönherr (*Mantissa secunda*, p. 57, 1847) as a new species of *Acantholophus*, but it was a *nomen nudum*, no description being published, though Waterhouse (*loc. cit.*, p. 2) included it in his table. Blackburn described 4 new species of *Acantholophus*.—*franklinensis* (*Trans. Roy. Soc. S. Aust.*, 1890, p. 92), *nircorittatus* (*Proc. Linn. Soc. N.S. Wales*, v., 1890, p. 576), *simplex* and *tatei* (*Report Horn Exped.*, 1896, p. 292). Of these, the name *simplex* is preoccupied, and I have already altered the species to *blackburni* (*Trans. Roy. Soc. S. Aust.*, xxxix., 1915, p. 59).

Lea described two species,—*tasmaniensis* (*Mitt. a. d. Zool. Mus. Berlin*, 1910, p. 182), and *foveirostris* (*Mem. Soc. Entom. Belgique*, xviii., 1910, p. 85).

Within recent years I have added 9 species to the genus.—*angusticollis*, *dixoni*, *brevicornis* (*Proc. Roy. Soc. Victoria*, xxvii., 1915, pp. 256-259), *browni*, *alpicola*, *tennantensis*, *halmaturinus*, *simulator* and *scaphirostris* (*Trans. Roy. Soc. S. Aust.*, xxxix., 1915, pp. 66-73). *A. brevicornis* I now regard, however, as merely a geographical race of *A. dumosus* Bohem., *A. tennantensis* as a variety of *A. tatei* Blackb., and *A. simulator* as little more than a variety of *A. tribulus* Mael.

In the present paper I propose the names of 10 species as new, which, with the removal of synonyms, etc., give a total of 57 species for the genus at present known. That this number will be augmented I have no doubt. Possibly also forms which I now regard as varieties of other species will prove with more material to be worthy of specific rank.

Characters of Genus.—Before proceeding to the question of the division of the genus, it may be advisable to discuss the characters at greater length than given in the generic diagnosis; this is the more necessary as it will afford an opportunity of defining some of the terms employed in the description of species.

In the majority of the species the head is concave in front, and, as is best seen from behind, separated from the dorsal surface of the rostrum by a distinct

ridge connecting the inner surfaces of the tubercles or crests which rise above the eyes. This ridge, which will be termed the intercrystal ridge, varies in development and is obsolete in some species, while in one section of the genus it is absent, and the division between the head and rostrum is marked by a transverse impression or sulcus. The supraorbital crests, which arise on either side above and somewhat in front of the eyes, show great variation in shape and development, the differences being of decided specific value. As a rule these crests are compound, consisting of two more or less closely united portions, which I have in general termed branches or rami, the posterior of which is almost always pointed. A few species show three distinct branches, generally, however, only separate at the apices. The branches vary much in form and development; sometimes they are more or less obtuse or dentiform, sometimes forming acute spines resembling the branching antlers of a deer. In other species again, the two portions cannot be made out, the crests consisting of a single tubercle or spine. The relation of the intercrystal ridge to the supraorbital crests appears to differ somewhat in different groups; in *A. tridentatus* and one or two others, the ridge joins the crests at the base of the median portion; in certain of the bidentate species the connection is clearly with the anterior portion, but in others apparently with the posterior. In many species, however, the crests arise, from a comparatively narrow base into which the ridge runs, and its continuity appears to be with either the posterior or anterior portion, according to the position from which it is viewed. I have not, therefore, been able to make as extensive a use of this character in separating groups of species as I had hoped. In some groups the base of the crests extends for quite an appreciable distance behind the intercrystal ridge, in others to a much less extent. On the outer side of the head, in front of the eye, is a deep groove; this generally extends for a short distance on to the outer surface of the crests. In the species where the rostrum is separated from the head by a transverse sulcus, this is generally continued for a short distance on to the inner surface of the crests. The rostrum in *Acantholophus* is always more or less excavate above, with the external margin generally raised and often bearing a distinct tubercle or spine. At the base are two more or less convergent ridges, joining the intercrystal ridge; these are often obscure or obsolete. The spaces between these ridges and the lateral margins I have termed the basal foveae; they are generally deep and closed around their margin, but sometimes the external portion of the margin is interrupted. The antennae are long and comparatively slender; the two basal joints of the funicle are longer than the others, but vary in their comparative lengths; the true length of the first joint can only be seen when viewed obliquely from behind. The club varies in length and thickness; in many species the basal portion is attenuated, and I have used the term pedunculate to describe such forms.

The prothorax shows great variation in structure, but the widely explanate upper surface with strongly dentate or tuberculate lateral margins is practically characteristic of the genus. One of the characters upon which I would divide the genus into two sections is the form of the anterior margin; in the majority of species this margin is widely rounded above and slightly produced, with an evident sinuation on each side leading to the formation of a wide and little prominent convexity below corresponding to the ocular lobe; in the species forming the second section, the margin is truncate or subtruncate above, and there is no sinuation nor corresponding ocular lobe. The disc of the prothorax is crossed by three, more or less distinct, transverse impressions or constrictions, of which the

anterior is the most conspicuous and separates off a distinct anterior collar; the middle is, as a rule, only indicated at the sides, where it generally forms a deep indentation between the lateral tubercles; the posterior forms a narrow ring around the base. Longitudinally, in most species, the disc may be divided into three portions; a median area, often more or less raised as a whole, though generally depressed along the median line and bounded on each side by a row of tubercles, which I have termed the submedian row; a sublateral area, without tubercles, but sometimes granulate, and the explanate lateral margins. The submedian tubercles are about 7 in number on each side, the first two being in front of the anterior constriction and the last on the basal constriction; the rest are arranged in one of two ways; in certain species, all the tubercles are in line or little out of it, such I describe as being in single series; in the other type, the intermediate tubercles are what I term exerted, that is, they are more outwardly placed and irregularly arranged, generally with one or two transversely set, the penultimate often elongate, obliquely placed and overhanging the basal constriction. The lateral margins present, broadly, three forms which may be termed tuberculate, spinose and dentate. In the tuberculate form the margins project outwards in two or three flattened, more or less triangular tubercles, of which the one situated immediately in front of the median constriction is the largest and is here termed the median; anterior to this is a smaller tubercle, varying in size and more or less closely fused with the median; behind the median constriction is another large tubercle, smaller than the median, which I term the posterolateral, or briefly the posterior. Anterior to the anterior constriction there is always present a small tubercle on the lateral margin of the anterior collar, which I have not made use of in descriptions, while, between the median and posterior tubercles, a small tubercle or granule is generally present, but lying below their plane.

In the spinose form, the median lateral tubercle is a strong, generally recurved, acute spine, the anterior is generally considerably smaller, while the posterior may be strongly developed and spiniform or represented by a mere spicula. In the dentate forms, the tubercles are less regular and often conjoined, though the median constriction is generally well marked, the three main tubercles being sometimes only traceable with difficulty. In the second section, the median area and submedian tubercles are not, or hardly, marked off from the rest of the disc which is more or less evenly granulate. The sides of the prothorax are convex, and marked by several oblique and irregular grooves.

The elytra are elongate, roughly about three times as long as the prothorax; the base is gently emarginate and bounded by the humeral angles which lie at the junction of the fifth and seventh interstices, the angle generally being marked by a single tubercle; sometimes the bases of the first and third interstices show forward projecting granules or tubercles. The apex is rounded, sometimes with an extreme emargination, or may be slightly produced, particularly in the female, and mucronate. The punctures are always shallow and generally indistinct, sometimes transversely confluent. The interstices bear rows of granules, but these are often confused by the tubercles and are generally only well developed on the first two interstices. Each elytron, with few exceptions, bears three rows of tubercles, situated on the third, fifth and seventh interstices; the first row extends from the base to the edge of the posterior declivity, the posterior being the largest and generally conical or acutely spiniform; the second row starts farther from the base and as a rule extends slightly beyond the first row posteriorly, the

tubercles of the row being generally all conical, though the posterior ones are larger; the third row is situated on the basal portion of the seventh interstee and may be represented by only one or two tubercles. The humeral tubercle belongs neither to the second nor third rows, being situated at the confluence of the fifth and seventh interstices. The other interstices bear no tubercles, except occasionally the posterior portion of the second; while the fourth and sixth are only traceable with difficulty. The sides are more or less inflexed and the interstices granulate, often obsolete, above. The ventral surface is plane in the male or lightly transversely convex, with the basal segments somewhat depressed; in the female the abdomen is convex antero-posteriorly and transversely. The anterior coxae are subcontiguous, almost, but not quite, touching. The tibiae often possess characters, generally sexual, of specific importance. The anterior tibiae are for the most part uniform in structure except in *A. denticollis* where there is a deep subapical emargination in the male. The intermediate tibiae possess sexual characters in many species in the form of a deep subapical emargination. The corbels of the posterior tibiae require a rather fuller description; these are more or less oval, with an anterior extension somewhat triangular in shape, and generally inclined at an angle to the plane of the rest of the corbel. The setae surrounding the corbel are interrupted at the extension which generally has a few setae more irregularly arranged or in clumps. This extension varies much in development, shape, and degree of development in the buttress which supports it from the anterior surface of the shaft; these variations may be sexual, as in *A. scabrosus*, but generally the characters are similar in both male and female. The posterior tarsi are more or less elongate, but shorter and broader in some species than in others.

Dissections have been made of the male genitalia in several species. These have shown that the structures do not differ fundamentally, though showing variation in the shape of the median lobe and in the form of the internal sac. I am deeply indebted to Dr. David Sharp and to Mr. F. Muir for a better knowledge and understanding of the anatomical arrangement of the parts of the male genitalia. The eighth sternite shows no variation,—it is partially chitinised in the form of a pair of roughly triangular pieces which do not quite meet in the median line. In a private letter Dr. Sharp states that the last ventral segment (*i.e.*, the eighth) in *Acantholophus* is in the condition normal for Rhyncophora.

Relation to Other Genera.—*Acantholophus* is related on the one hand to *Cubicorrhynchus*, and on the other to *Hyborrhynchus*. The point of distinction between *Acantholophus* and *Cubicorrhynchus* is not altogether easy to make; the character on which I rely to separate the two genera is the upper rostral surface. In *Acantholophus* this is always to some extent excavate, and never presents the broad flat appearance so characteristic of *Cubicorrhynchus*. For this reason I place *C. maximus* in *Acantholophus*, as it has a deeply excavate rostrum, though in general its facies resembles that of *Cubicorrhynchus*; it is, however, certainly congeneric with *A. granulatus* Sloane and *A. blackburni* Ferg. (= *A. simplex* Blackb.) which their authors placed unhesitatingly in *Acantholophus*. The species of *Cubicorrhynchus* are for the most part smaller than those of *Acantholophus*, and with few exceptions do not possess elytral tubercles. The species here grouped together under section II. possess many features in common with *Cubicorrhynchus* and at variance with the other section of *Acantholophus*, which, however, they resemble in their general facies. Probably this section will eventually be constituted a separate genus.

From *Hyborrhynchus* the present genus differs more widely; the arrangement of the rostral and head tubercles is different, but the chief point of distinction lies in the relation of the bases of the prothorax and elytra. In *Acantholophus* the base of the prothorax is practically as wide as the space between the humeral angles which are at the junction of the fifth and seventh interstices; in *Hyborrhynchus*, as in *Anasoptes* and allied genera, the base of the prothorax is measured by the distance between the ends of the third elytral interstices.

Subdivision of the Genus.—Macleay in his paper subdivided the genus into 4 groups:—

- A. With simple tubercle over the eye.
 - a. Three rows of tubercles on each elytron.
 - b. Two rows of tubercles on each elytron and one or two post-humeral lateral spines.
- B. With compound tubercle over the eye.
 - a. Two rows of tubercles on each elytron and under 4 lateral spines.
 - b. Three rows of tubercles on each elytron.

This classification followed on the lines of the table given by G. R. Waterhouse (*l.c.*, p. 1. 1854) for the few species known to him. Waterhouse, however, included in his table species that were afterwards placed in *Cubicorrhynchus* and *Hyborrhynchus*.

Macleay's arrangement is, however, by no means satisfactory, as, according to his grouping, the first 3 groups each contained three to six species, while the bulk of the species was placed in group 4 which thus included many dissimilar species.

In endeavouring to group the species together on a satisfactory basis, I have experienced great difficulty in deciding what should be regarded as primary characters, and the arrangement now suggested can only be regarded as tentative. The difficulties arise partly from the great variation in so large a genus, and partly from similar characters being sometimes present in members of what are otherwise remotely separated groups. This, in some cases, appears to be due to convergence of characters, in others possibly to the reappearance of an ancestral character. The simple or single form of the supraorbital crests is an example of the first; in several groups there appears a tendency to the formation of a single crest either by the complete fusion of two rami or by the suppression of one ramus, while in other instances the simple form seems almost a primitive character. As an example of what I have termed the reappearance of an ancestral character may be cited the subapical emargination or notch on the intermediate tibiae. This occurs throughout all the species of one or two groups, but also occurs in perhaps one or two species in a group, the other members of which do not possess this character. The notch also occurs in genera such as *Sclerorinus* and *Talaurinus* which are not nearly related to *Acantholophus*.

While, therefore, there occur groups of species all the members of which resemble each other closely in general facies, it is not always easy to define the characters or limits of such groups. In the accompanying table of species, therefore, while endeavouring to arrange the species according to their evident affinities, the characters selected for the purpose of the table are not always what I would regard as of primary importance.

The genus as a whole, however, falls readily into two sections. In the first, the head is separated from the rostrum by the intercrystal ridge; the prothorax is produced above and ocular lobes are present. The greater number of species

fall into this section. In the second section, the head is separated from the rostrum by a transverse impression; the prothorax is subtruncate above, and ocular lobes are absent. In these characters the second section agrees with the genus *Cubicorrhynchus*, and with good reason might be united to that genus; the species, however, in their general facies, much more closely resemble *Acantholophus*, and the rostrum is deeply excavate. Probably this section will require a new generic name.

The members of the first section may be divided further into tuberculate and spinose forms; this differentiation is not a good one as, after all, it is more or less a question of degree, but the division serves to separate two large groups of species, the members of each of which are more or less closely allied *inter se*. I have taken the character of the lateral prothoracic tubercles as determining whether a species belongs to the tuberculate or spinose subsection. In one or two cases it is difficult to interpret this feature, but most of the doubtful species are evidently related to other species belonging to one or other of these two subsections. In the tuberculate forms the submedian rows of prothoracic tubercles are never in single series, but always have the intermediate tubercles irregularly set (exserted). In the spinose subsection these submedian tubercles are generally in single series, but may be exserted. Further subdivision into groups is a matter of great difficulty, principally owing to the occurrence of so many isolated species, each more or less requiring a group to itself. Certain natural groups do occur, and in the table of species I have indicated such groups by the group name in brackets after the character which immediately governs the group. Such group names have only been made use of in the tuberculate subsection.

TABLE OF SPECIES.

Section I.—Rostrum divided from head above by an intercrystal ridge. Apical margin of prothorax slightly produced above head, with ocular lobes.

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| 1 | (54) | Lateral prothoracic tubercles flattened, trianguliform. [Submedian row of tubercles on prothorax not in single series]. (<i>Tuberculate</i> species). |
| 2 | (11) | With the following characters in combination: Supraorbital crests simple; intermediate tibiae notched (<i>dumosus</i> group). |
| 3 | (6) | Intercrystal ridge well developed. |
| 4 | (5) | Intermediate ventral segments strongly strigose; subapical elytral spines absent or mere spicules <i>dumosus</i> Bohem. |
| 5 | (4) | Intermediate segments not strigose; subapical spines well marked.
<i>apicalis</i> Macl. |
| 6 | (3) | Intercrystal ridge obsolete or but little developed. |
| 7 | (10) | Prothoracic tubercles depressed, flattened. |
| 8 | (9) | Form normal; tubercles few and large. <i>transitus</i> Macl. |
| 9 | (8) | Form very elongate; tubercles more numerous and smaller. <i>browni</i> Perg. |
| 10 | (7) | Prothoracic tubercles erect, conical <i>amycteroides</i> Macl. |
| 11 | (2) | Without the combination of characters as in <i>dumosus</i> group. |
| 12 | (49) | Apical tubercle of second elytral row on a level with, or posterior to apical tubercle of first row. |
| 13 | (42) | Apical ventral segment more or less flattened. |
| 14 | (39) | Supraorbital crests arising from a comparatively broad base.
<i>(marshami</i> group). |
| 15 | (34) | Crests more or less distinctly branched. |
| 16 | (33) | Crests distinctly biramate. |
| 17 | (20) | Posterior tarsi with first joint short and broad. |
| 18 | (19) | Intermediate tibiae simple. <i>marshami</i> Kirby. |
| 19 | (18) | Intermediate tibiae notched. <i>sellatus</i> , n.sp. |

- 103 (102) Elytral punctures and granules much less distinct. *scaphirostris* Ferg.
 104 (93) Lateral margins of prothorax more irregularly dentate.
 105 (110) Elytral tubercles more or less distinct.
 106 (107) Anterior tibiae simple. *planicollis* Waterh.
 107 (106) Anterior tibiae with subapical notch.
 108 (109) Supraorbital crests simple. *denticollis* Macl.
 109 (108) Supraorbital crests bidentate. *serraticollis* Macl.
 110 (105) Elytra granulate, not tuberculate.
 111 (114) Form comparatively slender, resembling *Acantholophus*.
 112 (113) Supraorbital crests single; elytral granules duplicated on some of the
 interstices. *granulatus* Sl.
 113 (112) Supraorbital crests bidentate; elytral granules in single series.
blackburni Ferg.
 114 (111) Form robust, resembling *Cubicorrhynchus*; elytral granules in double
 series. *maximus* Macl.

Geographical Distribution.—The genus has probably as wide a distribution as any of the subfamily, with the possible exception of *Cubicorrhynchus*. It is noteworthy in this connection that *Acantholophus* occurs in Tasmania, whereas *Cubicorrhynchus* has never been recorded from that island. Section II., though few in numbers, has a distribution practically co-extensive with the genus, though apparently the south-west has more species belonging to this section than any other portion. Both the eastern and western sides of the continent are rich in species of Section I.; but with the difference, that whereas tuberculate forms predominate on the eastern side, spinose species are dominant in the west. The species included in the *dumosus* group afford the most striking exception to this generalisation; the headquarters of these is in the south-west, but the group spreads into South Australia and touches the mallee district of Victoria. Almost the only spinose species in the eastern portion of the continent are two that occur in Queensland. The species of southern Australia mostly fall into the small *adelaidae* group. Central Australia, as far north as Tennant's Creek, possesses a few species, and it is noteworthy that these are closely related to forms occurring in north-west Australia, where the genus has been met with as far north as Condon. No species have so far been recorded from the far north. *Cubicorrhynchus* has a similar distribution, but whereas that genus frequents the open plains and inland slopes, *Acantholophus* appears to prefer the mountain ranges. This generalisation is based on my knowledge of the two genera in Eastern Australia, and I cannot say if the same holds good for other parts. On the east, however, the genus is widely distributed along the Main Dividing range and on the sandstone formation of the Sydney basin; where it occurs farther inland it is, as a general rule, on the spurs and ranges such as the Warrumbungles, which are offshoots from the main chain.

Habits.—Specimens are most often taken under logs and stones, or crawling along paths at dusk or in the early morning. At least one species—*A. marshami*—can be taken around Sydney at the base of grass-trees (*Xanthorrhoea*), and Mr. Clark, of Perth, informs me that other Western Australian species have this habit. I have also received specimens of *A. simulator* from Mr. A. M. Lea marked as taken in grass-trees.

Recently, when this manuscript was well nigh complete, I received from Mr. J. Clark valuable notes on the habits of many of the Western Australian species, which seem worthy of being recorded *in extenso*:—"I am quite satisfied that the majority of our W.A. *Acantholophus* feed on the bark of trees, mostly Marri

(*Euc. calophylla*), but they take to several other trees, not all Eucalypts. I am also of the opinion that the larvae feed on the roots of grass-trees, but have so far got no proof. It is mostly in grass-tree country that the whole sub-family abound, although I have got a few far from such country. Dead and living grass-trees attract members of the Family, but for what purpose I do not know. Of all the species I have taken on and in grass-trees, I have seen no signs of foliage or leaf base having been touched by them; most of the species taken in dead grass-trees are found in small cavities which they seem to have dug in the decaying heart or pith, but I do not think they have pupated there, as the cell is clearly the work of the adult, who prefers the decaying heart of the grass-tree as food, the larval and pupal stages being passed in the roots?"

"Of the species under loose bark on trees, they eat the bark from within outwards, leaving the sap alone so that they do not interfere with the health of the tree, except that they keep the bark loose and so help other agencies to work on the trees. I have taken over a dozen on one tree on many occasions. Most of the species taken on the ground (all genera) are mostly at the foot of a tree with fresh bark lying around, on which they have been feeding, this particularly applies to *Cubicorrhynchus*, and these are sometimes taken under the loose bark on the trees. Several others seem to live in or on decaying timber such as *Ac. (Cubi.) maximus*, which is only to be taken under rotting timber or stones, and nowhere else, and always on rough stony or hilly country. Those species taken on the hilly country are rarely met with on the sandy plains and vice versa."

Mr. Clark has also furnished me with a list of Western Australian *Amycterides* known to him, with notes as to habits, etc., from which I have taken the following entries relating to individual species of *Acantholophus*.

"*A. gladiator* Pasc.—I have taken about a dozen, but always in tussocks or other small thick-growth. I fire the clump and drive them out.

A. transitus Mael.—About 7 specimens taken, all on the ground under bits of timber, etc. I can get this species in one place only, it seems somewhat rare.

A. amycteroides Mael.—Numerous in dead grass trees, and under loose bark of various trees, also a few amongst the foliage of living grass-trees and sometimes under logs.

This and the following species seem to prefer the hilly country, and are the most commonly met species.

A. suturalis Bohem.—Similar to above, but is sometimes taken on the low sandy country.

A. spinosus Mael.—Confined to the low sandy country, and usually on the ground under timber, bark, etc., but sometimes taken under loose bark on trees. A peculiar feature of this species is that they usually occur in pairs, but not "in cop," and never numerous.

A. aureolus Bohem.—Usually under loose bark or in dead grass-trees. Mostly on the hills.

A. nasicornis Pasc.—One specimen, under timber on ground.

A. nivicorittatus Blackb.—Always on the ground, under logs, etc.

A. hypoleucus Bohem.—On the ground, and under loose bark; hilly country.

A. dumosus Bohem.—Same as above.

A. crassidens Mael.—One specimen only, under bark of Marri.

A. humeralis Mael.—I have never taken this species.

A. hystrix Bohem.—Not taken by me.

- A. scaphirostris* Ferg.—One specimen under stone.
A. cupreomicans n.sp.—Under bark of Marri.
A. maximus Macl.—Only on the ground, under stones, timber, etc.”

ACANTHOLOPHUS DUMOSUS Bohem.

Boheimann, Schönh., Gen. Spec. Chre., vii., i., 1843, p. 77; Maeleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 272.

♂. Black; clothing sparse, dark, irregularly maculate with white on elytra, forming an irregular vitta along suture, on sides forming maculae above and an interrupted vitta along lower margin.

Head concave in front; intereristal ridge conspicuous; supraorbital crests short, simple, briefly pointed, arising from ends of intereristal ridge and from head immediately posterior to it. Rostrum rather shallowly concave, lateral margins feebly angulate, sometimes with a small tooth anteriorly; internal ridges not conspicuous, strongly convergent posteriorly; basal foveae large, closed. Antennae of moderate length, funicle with second joint longer than first, club briefly pedunculate. Prothorax flattened, median area obsolete granulate; submedian tubercles small, granuliform, obsolescent in centre, the apical pair slightly larger, not arranged in single series; lateral tubercles flattened, trianguliform, the median one large, somewhat spiniform, curved backwards at apex, with a small tubercle conjoined anteriorly, posterior lateral tubercle trianguliform, almost as large as median, not recurved. Elytra rather short, with granules somewhat irregularly disposed; with three rows of tubercles, first row with 8—10, mostly granuliform, the last 2 only acute and spiniform, ending on declivity, sometimes with a few spicules beyond; second row with 6—7, the basal tubercles conical, the last 3 acutely spiniform; humeral tubercle large and conical; third row with 4 outwardly projecting spiniform tubercles. Ventral surface coarsely strigose. Intermediate tibiae notched.

♀. Larger than ♂ and broader and stouter; prothorax similar, elytra with fewer, more widely separated tubercles, 8—9, 5 and 3 on the three rows, no subapical tubercles; undersurface convex, ventral segments almost as coarsely strigose as in ♂. *Dimensions*: ♂. 16 × 6 mm.; ♀. 20 × 8 mm.

Hab.—Western Australia: King George Sound, Mundaring Weir, Tenindewa.

The specimen from Tenindewa (♂) has rather longer crests and two distinct spicules on declivity in line with first row; it is also somewhat narrower. I do not think it is distinct as I find that specimens show a tendency to vary in these respects. A ♂ labelled “N. Territory” is considerably more slender than King George Sound specimens, but I cannot separate it, and furthermore I believe the locality to be incorrect.

A. dumosus Boh., is more nearly allied to *A. apicalis* Macl., but can be readily distinguished by the absence of subapical tubercles on the elytra, and by the differently sculptured ventral surface. The other species of the group differ widely in many respects.

ACANTHOLOPHUS DUMOSUS Boh. var. BREVICORNIS Ferg.

Proc. Roy. Soc. Victoria, xxvii. (New Series), Pt. ii., 1914, p. 257.

I now regard this species as a geographical race or variety of *A. dumosus* Boh., the distinctions not appearing sufficient to justify specific rank. The occur-

rence of this species and of *A. humeralis* Macl., in western Victoria furnish instances of disconnected distribution which are almost unparalleled among the Amycterides.

ACANTHOLOPHUS APICALIS Macl.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 276.

♂. Closely allied to *A. dumosus* Boh. Black; clothing indistinct, greyish, somewhat denser on sides.

Head rather deeply concave in front, with three indistinct impressions above, converging on concavity; intereristal ridge well developed, more strongly curved backwards at ends; supraorbital crests simple, arising to a great extent from behind the ends of ridge. Rostrum somewhat longer and narrower than in *A. dumosus*, lateral margins slightly sinuate in middle, obtusely angulate anteriorly; internal ridges distinct, strongly convergent; basal foveae large and deep. Antennae with second joint of funicle hardly longer than first, club large, not pedunculate. Prothorax with median area free from granules, submedian tubercles distinctly larger and obtusely conical, not in single series, the central ones more outwardly placed; lateral tubercles as in *A. dumosus*. Elytra narrower and considerably longer than in *A. dumosus*; granules larger, more distinct and more regularly set; tubercles smaller, conical but less acutely spiniform; first row with 11—13, the basal tubercles small and rounded, the last 2—3 becoming larger and more conical and acute, ending on edge of declivity; second row with eight, rather closely set, conical tubercles, larger posteriorly, and reaching a lower level on declivity than first row; humeral tubercle large and conical; third row with 5, the first large and conical, the others becoming progressively smaller; a pair of strong subapical tubercles present. Ventral surface not strigose, rather closely set with fine decumbent setae arising from small, shallow punctures, somewhat more evident on apical segment. Legs with intermediate tibiae notched.

♀. Larger, more ovate; elytra broader, with tubercles reduced to mere granules, hardly larger than the other granules, only the last two of first, and the last three or four of second row at all larger and conical, though smaller than corresponding ones in ♂; humeral tubercle and first tubercle of third row moderately large, followed by a row of 6 granules; subapical tubercles large as in male. Venter convex. Legs simple. *Dimensions*: ♂ 18 × 6 mm.

Hab.—South Australia: Mt. Lofy.

Closely allied to *A. dumosus* Bohem., the present species may be distinguished by its more elongate form, with the presence of large subapical tubercles, and by the differently sculptured ventral surface.

On the name label of this species in the Macleay Museum there are two males; as is usual neither is marked as type.

ACANTHOLOPHUS AMYCTEROIDES Macl.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 271.

♂. Large. Black; moderately densely clothed with brown subpubescence; elytra with a greyish vitta posteriorly between the first and second rows of tubercles, extending down and most marked on declivity, with another, somewhat interrupted, between second and third rows; sides with a grey vitta running along middle of sides of prothorax and along lower margin of elytra, with a few macules above on elytra.

Head concave in front; intercrystal ridge absent, the continuity of head and rostrum interrupted above by a slight difference in level; supraorbital crests simple, appearing as a prolongation upwards of the lateral margins of the rostrum, apex briefly pointed, directed upwards. Rostrum rather shallowly concave above, with a deep median impression, foveiform anteriorly; lateral margins raised, parallel for greater part of length, slightly divergent and obtusely angulate anteriorly; internal ridges and foveae obsolete. Antennae moderately long, scape rather stout, somewhat curved, first joint of funicle shorter than second, club elongate, fairly stout, pedunculate. Prothorax with median area with a central carina in posterior half; submedian tubercles distinct, erect, noduliform, 7 in number, the central ones exerted; lateral tubercles trianguliform, the median the largest, with apex somewhat recurved, the anterior smaller, but separate, except at base, the posterior slightly smaller than median and more obtuse. Elytra with granules most distinct along suture; with three rows of moderately large, conical, tubercles, first with 6—7, rather small and obtuse, the last 2 larger and spiniform, ending on edge of declivity; second with 5—6, all conical, the last 3 larger and spiniform, reaching a lower level on declivity than first row; humeral tubercle moderately large; third row with 4—5, moderately large and conical, but decreasing rapidly in size posteriorly. Ventral segments obsolete punctate, with fine subsetose pubescence, thinly set, but condensed at sides. Intermediate tibiae with a strong subapical notch.

♀. Larger, more robust than male; elytra much broader and more ovate, with more evident granules, tubercles smaller, first row with 7, the last three stronger and more conical, second with 7, larger posteriorly, third with 5. Venter convex, obsolete punctate; intermediate tibiae simple. *Dimensions*: ♂ 16 × 6 mm.; ♀ 18 × 9 mm.

Hab.—Western Australia: King George Sound, Parkerville.

A male from Canning Ranges is larger and differs somewhat in the supraorbital crests, which do not appear so much like a continuation of the lateral rostral margins, but apparently arise somewhat internal to them; the lateral prothoracic tubercles are also larger, with the anterior and median tubercles almost completely conjoined and more strongly directed back at the apex; the posterior is also more acute; the elytral tubercles are stronger and more numerous, 8, 8 and 6 in number in the three rows. A female from Kalamunda resembles the above male in the supraorbital crests; the elytral tubercles number 9, 8 and 5. I do not however, think these differences are of specific importance.

The species can be readily recognised among the other members of the group by the rounded nodules on the prothorax, not flattened as in *A. transitus* nor with the anterior pair enormously developed as in *A. gladiator*.

ACANTHOLOPHUS TRANSITUS Mael.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 271.

♂. Large. Black; sparsely clothed with grey subpubescence, elytra more densely vittate with grey between first and second rows of tubercles and between second and third rows; sides vittate above and below.

Head deeply concave in front, with a single median carina; intercrystal ridge represented by short oblique ridges running from the ends of the internal rostral ridges to the crests; supraorbital crests single, short, little raised, and obtuse. Rostrum with upper surface rather shallowly excavate and rugosely punctate;

lateral borders raised, angulate in front, posteriorly running into base of supra-orbital crests; internal ridges strongly convergent, only evident at base; basal foveae deep. Antennae rather stout, first joint of funicle shorter than second, club stout, briefly pedunculate. Prothorax flattened; median area with an irregular, impressed, median line, set with flattened, little raised granules of varying size; submedian tubercles similarly flattened, noduliform, varying in size and shape, irregularly set; lateral tubercles broadly trianguliform, the anterior almost completely conjoined with median, and the posterior as large as median. Elytra moderately elongate, shorter than in *A. browni*; punctures small and indistinct; granules small, but regularly arranged; first row of tubercles 8—9 in number, basal ones small and granuliform, the last 3—4 becoming larger and more conical, ending on edge of declivity; second row with 6—7, all conical, but smaller at base, ending at a lower level on declivity, with a small spine beyond last tubercle; humeral tubercle large and conical; third row with 4, conical outwardly projecting tubercles, the first the largest. Ventral surface set with large, rather shallow punctures, the intervals slightly raised or strigose, punctures filled with large subsquamose setae. Intermediate tibiae with a rather shallow subapical notch.

♀. Very large, with broad elytra; first row of tubercles granuliform, the last 2—3 small conical tubercles; second with 10, all small, but larger than first row, and conical posteriorly; third with 6. Venter convex, obsolete punctate, with small subsquamose setae in the punctures. *Dimensions*: ♂. 19 × 7 mm.; ♀. 23 × 9.5 mm.

Hab.—Western Australia: King George Sound, Coreongenup, Swan River.

A male from Swan River has the ventral segments all coarsely punctate with the interstices raised and strigiform.

On the name label in the Macleay Museum are two males from Swan River; one has the ventral sculpture almost obsolete as in the ♂ described above, the other is coarsely strigose as in the Swan R. male; the tubercles are 8—9, 7—8, 3—4 in the one male, and 8—9, 7—9, 4—5 in the second. The difference in the sculpture of the ventral segments I cannot regard as of specific value; it seems more probably an individual variation.

Apart from the following species, *A. browni* Ferg., the present one is most closely related to *A. amycteroides* Mael., but differs, *inter alia*, in the flattened prothoracic tubercles.

ACANTHOLOPHUS BROWNI Ferg.

Ferguson, Trans. Roy. Soc. S. Australia, xxxix., 1915, p. 66.

This species is closely allied to *A. transitus* Mael., but may be readily distinguished by its much more elongate form, with more numerous and smaller elytral tubercles.

Hab.—Western Australia: Ankertell.

ACANTOLOPHUS MARSHAMI Kirby.

Curculio marshami, Kirby, Trans. Linn. Soc., xii., 1818, p. 436; Gyllenhal, Schönh. Gen. Spec. Curc., ii., 1834, p. 472; Boisduval, Voy. de l'Australie, ii., 1835, p. 369; Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 279; Lea, Mém. Soc. Ent. Belgique, xviii., 1910, p. 86.

♂. Clothed with obscure brownish subpubescence, prothorax feebly vittate with grey in middle line.

Head concave in front, with a rather low, but distinct intercrystal ridge; supraorbital crests rather obtuse and stumpy, the two rami about equal in length, projecting forwards and upwards and little divergent; intercrystal ridge running into base of anterior ramus. Rostrum short and broad, concave above, with external margins obtusely angulate in front of middle, low posteriorly; internal ridges moderately distinct; basal foveae well defined. Antennae with first joint of funicle shorter than second; club elongate, pedunculate. Prothorax with submedian tubercles low, noduliform, the apical ones not larger nor conjoined, not in single series, the middle ones more outwardly placed; sides explanate-tuberculate, the tubercles flattened trianguliform, the anterior conjoined with median, which is the largest, the posterior well-developed but shorter than median. Elytra with rows of somewhat obscure punctures, and with granules varying in development, sometimes obsolete; with three rows of tubercles, varying in number and somewhat in size, the first row with 8—10, the basal ones small and noduliform or hardly larger than granules, becoming larger and more acute posteriorly and ending on edge of declivity; second row with 6—8, larger and more acute posteriorly and ending slightly farther down on declivity than first row; humeral tubercle small but acute, followed by third row of 5 outwardly projecting tubercles, becoming smaller posteriorly. Venter nitid with moderately coarse punctures, the apical segment rather coarsely strigose, with punctures confluent. Intermediate tibiae simple; posterior tarsi with first joint short and broadened to apex.

♀. Larger and more obese; head and prothorax similar; elytra broader with evident rows of granules, tubercles smaller and more obtuse; venter convex, with punctures as in male. *Dimensions*: ♂. 17 × 7 mm.; ♀. 19 × 8.5 mm.

Hab.—N.S. Wales: Sydney, Illawarra.

There exist two forms of this well-known species which I was inclined at first to regard as separate species, but a longer series shows that the characters which distinguish them are variable. In some specimens the elytral tubercles are fewer and more widely separated, while they are also slightly larger and more acute; the interstitial granules are obsolete or little evident. In the other form the tubercles are more numerous, smaller, and more obtuse, while the granules may be very conspicuous, particularly on the sutural and second interstices. Intermediate forms between the two extremes, however, occur. Probably the type belonged to the more granulate form, as the granules are mentioned in the original description.

The species may be distinguished from other members of the group, with the exception of *A. sellatus*, by the much broader and shorter posterior tarsi. From *A. sellatus* it is distinguished, *inter alia*, by the simple intermediate tibiae.

The species is not uncommon about Sydney, and lives in the roots of the grass-trees (*Xanthorrhoea*), a habit possessed by some Western Australian and South Australian species. Specimens in the collection of the late H. W. Cox were labelled Illawarra; probably they were taken near Otford and on the sandstone formation.

Masters' Catalogue gives two synonyms under *A. marshami*,—*echinatus* (Dej. Cat., 1st Ed., p. 64) and *sepidioides* (Latr., Dej. Cat., 3rd Ed., p. 289)—but these names appear to be *nomina nuda*.

ACANTHOLOPHUS SELLATUS, n.sp.

♂. Black, rather densely clothed above, except on tubercles, with brown subpubescence, prothorax and elytra obscurely vittate with grey.

Head strongly concave in front, supraocular crests large, broad at base, with the two rami almost completely fused, the anterior ramus not projecting forward, rounded above, separated from posterior by a slight indentation on free margin, the posterior prolonged as a strong conical process; intercrystal ridge strongly raised, running into base of anterior portion of crests. Rostrum widely and moderately deeply concave in front, with lateral margins strongly angulate in middle; internal ridges widely divergent anteriorly, basal foveae small but evident. Antennae with second joint of funicle longer than first; club elongate-obovate. Prothorax (4.5×5 mm.) with feeble ocular lobes; median area rather broad in middle, median tubercles consisting anteriorly of a pair on each side, conjoined to form short parallel ridges, in centre of a group of rounded, somewhat depressed, confused tubercles, and posteriorly of a large, strong, backwardly projecting tubercle on each side, strongly convergent and obliquely set, their inner surfaces looking upwards and inwards; lateral margins with a pair of conjoined tubercles in front of middle, triangular, flattened above, and with a single smaller tubercle posterior to middle. Elytra (11×6.5 mm.) elongate, only moderately widened posteriorly; punctures obscure, and granules small and indefinite; sutural interstice with a slightly elevated ridge on each side of base; with three rows of moderately strong spinose tubercles, first row with 7 tubercles, the basal ones smaller and not conical, the last 2—3 conical and ending at edge of declivity; second row with 7, projecting outwards and upwards, ending at level of declivity; third row with humeral tubercle large, but smaller than following one, and 5 other spinose tubercles, extending to middle of elytron. Lateral interstices somewhat obsolete granulate. Under surface rather closely set with moderately long black setae arising from small punctures, the apical segment more asperate-punctate. Legs with intermediate tibiae strongly emarginate above apex; posterior tarsi with first joint comparatively short and stout, as in *A. marshami*.

♀. Larger, more dilatate than male, the elytra broader, more ovate in outline; under surface more strongly convex; intermediate tibiae not notched. *Dimensions*: ♂, 16×6.5 mm.; ♀, 19×8.5 mm.

Hab.—N.S. Wales: Inverell.

The shape of the posterior pair of thoracic tubercles should render this species easy of recognition, these tubercles are somewhat larger, broader and more flattened in the female. The combination of comparatively short posterior tarsi with the notched intermediate tibiae should also distinguish it from its known congeners.

I have at various times seen a number of specimens of this species, all from the New England Tableland in the vicinity of Inverell.

ACANTHOLOPHUS ECHIDNA Mael.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 280.

♂. In general appearance resembling *A. marshami*, but venter differently sculptured. Black, clothing scanty.

Head concave in front, intercrystal ridge low; supraorbital crests larger than in *A. marshami*, the anterior ramus strongly convex anteriorly, with apex obtuse, the posterior ramus somewhat longer, directed slightly backwards. Rostrum similar to *A. marshami*, but with the external margins more strongly angulate. Antennae with first and second joints of funicle subequal; club short, hardly pedunculate. Prothorax with two anterior tubercles of submedian group separ-

ate, or conjoined to form a short ridge, the central ones somewhat exerted, the penultimate larger, obliquely set and overhanging the posterior constriction; lateral tubercles as in *A. marshami*. Elytra with a row of large granules along suture, most evident at base, granules indistinct on other interstices; with stronger tubercles than in *A. marshami*; first row with 7—8, second with 6—7, more closely placed and extending farther down declivity, third row with 4; humeral tubercle small, but distinct. Ventral segments coarsely strigose, cancellate-punctate, the intermediate segments being strigose as well as the apical. Legs simple; posterior tarsi with first joint longer and more slender than in *A. marshami*.

♀. Broader than male; prothorax with two anterior median tubercles separate, the other tubercles larger than in female of *A. marshami*; elytra with a distinct row of granules along second interstee, with tubercles smaller than in ♂, but larger than in ♀ of *A. marshami*, 8, 9, and 5 in number; ventral surface more convex. *Dimensions*: ♂. 17 × 6 mm.; ♀. 19 × 7 mm.

Hab.—N. S. Wales: Blue Mountains.

This species is not uncommon at Blackheath, but I have not seen it from elsewhere. It may be easily recognised by the sculpture of the ventral segments, which is more strigose than in any other species of the *marshami* group.

ACANTHOLOPHUS ECHINATUS.

The question of what species is to be regarded as *A. echinatus* is very much involved.

The use of the name first appears in Dejean's Catalogue, 1st ed., p. 64. I have not seen this work and know of the quotation only from later authors. The name as here used appears to be merely a *nomen nudum*, but it is placed as a synonym of *A. marshami* Kirby in Masters' Catalogue (No. 4848).

Guérin-Méneville in the Voyage de la Coquille, ii., p. 122, described a species of *Acantholophus* as *A. echinatus*, and a Sydney species has hitherto been regarded as Guérin's species, with the description of which it agrees fairly well, and Port Jackson was given as the locality by Guérin. Unfortunately I have been unable to discover the date of publication of Guérin's species. Volume ii. was published as a whole in 1838, according to the date on the introduction, though the title page bears the date 1830. It is certain that the work was first published in parts or livraisons, and Sherborne and Woodward (Ann. Mag. Nat. Hist., (7), vii., 1901, p. 391), give the date of publication of this part as 1831. This can hardly be correct, as in his remarks on the genus *Acantholophus*, Guérin quotes the date at which he was actually writing as 15 December, 1833. The species therefore could not have been published before 1834, and was possibly published later still. In 1835 Boisduval in the Voy. de l'Astrolabe, ii., p. 369, published the description of another *Acantholophus echinatus*. The description itself is useless, but at the end Boisduval stated that specimens were in the Dejean Collection and in the National Museum. The specimen in the Dejean Collection, which is now in the Brussels Museum, was examined some years ago and proved to be the same as *A. mucronatus* Mael. There is also a species labelled as the type of *A. echinatus* in the Museum d'histoire naturelle in Paris, which I have also seen and which is certainly *A. aureolus* Mael. Until recently I was under the impression that this was the type of *A. echinatus* Guérin, but unfortunately I omitted to make a copy of the labels attached to the specimen, and it is possible that it is the specimen of *A. echinatus* Boisduval, stated to be in the Museum national. Against its being regarded as Guérin's species are the facts that it does not conform to

Guérin's description and that the known locality of *A. aurcolus* is far removed from Port Jackson. Furthermore, none of Guérin's other species of Amycterides are at all events to be now found in the Paris Museum. On the other hand, it is rather extraordinary that Boisduval should have placed under the one species two such dissimilar insects as *A. mucronatus* and *A. aureolus*. The question of the priority of Guérin's and Boisduval's names hangs on the determination of the date of publication of *A. echinatus* Guérin. Possibly the best solution of the problem would be to accept the name as being first used by Dejean, and then to sink it as a synonym of *A. marshami* Kirby.

In the meantime, and until further information is available, I propose to regard the Sydney species as *A. echinatus* Guér., as it seems to me that no further confusion will be caused by following this course, since that insect is already labelled in most collections under this name.

It is to be noted that in Masters' Catalogue the references (No. 4838) are given to *echinatus* Guér., though in his revision (Trans. Ent. Soc. N.S. Wales, i., 1865, p. 280) Macleay quoted the species as of Boisduval, making no reference to Guérin-Ménéville's use of the name.

The Sydney species is included in the tabulation given in the present paper, but I have thought it advisable not to give a lengthy description. The species is closely allied to *A. spinifer* Mael., and *A. mucronatus* Mael., differing from the former in the more elongate antennae, with elongate peduncle to club, and from the latter in its more robust form, and somewhat different supraorbital crests. The female is more produced than the male, but is not strongly mucronate as in *A. mucronatus*.

ACANTHOLOPHUS MUCRONATUS Mael.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 287; *A. echinatus*, Boisd. (nec Guérin), Voy. de l'Astrolabe, ii., 1835, p. 371; Ferguson, Proc. Linn. Soc. N.S. Wales, xxxvi., 1911, p. 143.

An elongate species, the female with the elytra strongly produced at apex and separately mucronate.

♂. Elongate; rather densely clothed with brown subpubescence; thorax with a narrow, grey, median stripe; elytra maculate with grey.

Rostrum with lateral margins angulate in middle. Head as in *A. marshami*; supraocular crests short, rather stumpy, the rami little projecting. Antennae long and slender, the second joint of funicle noticeably longer than first, club with an elongate peduncle. Prothorax similar to *A. marshami*, the median tubercles somewhat larger, and the lateral tubercles somewhat longer. Elytra long and comparatively narrow; tubercles larger than in *A. marshami*, first row with 7, second with 6, third with 3—4 in addition to humeral tubercle which is smaller but acute. Under surface with intermediate segments rather closely set with setigerous punctures tending to become confluent, apical segment strigose. Legs rather long, simple.

♀. Head and prothorax as in ♂; elytra more obese, the apex much produced and terminating on each side of suture in a long mucronation, these latter sometimes widely separated, sometimes approximated. Venter convex, punctures smaller and less confluent. *Dimensions*: ♂, 18 × 6.5 mm.; ♀, 19 × 7.5 mm.

Hab.—N.S. Wales: Blue Mountains.

The male resembles the other members of the group, but is distinguished by

its somewhat narrower form and elongate antennae; the female is distinguished by the elytral mucronation.

This species is not uncommon at Blackheath, on the Blue Mountains.

The above description has been drawn up from specimens in my own collection. On the name label in the Macleay Museum are two females, measuring 21×7.5 mm., and 19×7 mm.; the elytral tubercles number 9, 9, 5, and 8—10, 8—9, 4—5 on the two specimens.

Some years ago I examined a specimen in the Brussels Museum collection which was labelled as being the type of *A. echinatus* Boisd.* The whole question of the use of the name *echinatus* is discussed elsewhere in this paper (see p. 37.)

ACANTHOLOPHUS SPINIFER Mael.

Macleay, Trans. Ent. Soc. N.S.W., i., 1865, p. 284; *A. howittii*, Mael., *Id.* p. 285.

♂. Allied to *A. marshami* Kirby, but with the posterior tarsi longer. Black; thinly clothed with minute squames, brownish along suture, greyish white on the inner side of the second and third rows of elytral tubercles.

Head concave in front, with distinct intercrystal ridge; supraorbital crests stout, arising from a broad base, the anterior ramus strongly convex anteriorly, apex upwardly projecting, rather blunt, posterior ramus longer, pointing upwards and slightly backwards. Rostrum with lateral margins strongly raised and angulate in the middle. Antennae with first two joints of funicle subequal, club not pedunculate. Prothorax arranged as in *A. marshami*, the submedian tubercles larger, rounded or obtusely conical, the penultimate convergent, ridge-like; lateral tubercles as in *A. marshami*. Elytra rather strongly convex; punctures small, but evident and regular, granules not traceable except at base of suture; tubercles mostly conical and spiniform; first row with 7, the basal ones obtusely, the others acutely conical and larger, ending on edge of declivity, second row with 8, all acutely conical, the apical tubercles larger and spiniform, extending half-way down declivity; humeral tubercle about one-half the size of first of third row; third row with 4—5 acute tubercles. Ventral surface nitid, with small and obsolescent punctures, somewhat larger on apical segment, not confluent except at extreme apex. Legs simple, posterior tarsi with basal segments noticeably longer and more slender than in *A. marshami*.

♀. (*A. howittii* Mael.)—Similar but broader; supraorbital crests with the two rami hardly separated; elytra with evident rows of granules between the tubercles, the latter slightly smaller than in ♂, 6, 7, 3—4, and two small tubercles are present on second interstice; apex of elytra rather feebly mucronate. Venter convex, punctures as in male. *Dimensions*: ♂, 16×5 mm.; ♀, 18×7.5 mm.

Hab.—Victoria: Bendigo, Mordialloc.

There are 2 males on the name label of *A. spinifer* in the Macleay Museum, and two females on that of *A. howittii*. A series from Bendigo, for which I am indebted to Mr. J. E. Dixon, and a series from Mordialloc in the National Museum agree with the Macleay Museum specimens, with the exception that the tubercles are somewhat fewer in number (5—6, 6, 3—4); the Mordialloc specimens are more densely covered with brownish clothing; in some cases the tubercles alone are uncovered.

*The specimen bore the following labels:—1. Nouv Hollande; 2. Coll. Dejean, Coll. Roelofs; 3. *echinatus* d'Urville; 4. Type; 5. *Acantholophus echinatus* D'Urville h. in Nova Hollandia d. Dr. D'Urville; 6. Type *A. echinatus*.

Besides these Victorian specimens a number of forms occur in New South Wales, which seem at least entitled to varietal rank. I have thought it best to alix names to these though the actual structural differences are slight.

A. var. *FUSCOVITTATUS*, n.var.

♂. Densely clothed above with depressed sub-squamose tomentum, the tubercles as well as the intervals densely clothed; on head light brown, on prothorax dark brown, obscurely vittate with grey in middle, on elytra forming a broad cinnamon brown median vitta, tubercles clothed with a similar colour, the intervals between with greyish clothing, this colour extending on to the inner surfaces of the apical tubercles of the second row; sides with dense brown clothing; under surface with depressed yellowish setae moderately closely set.

Head and rostrum as in typical specimens, the antennae with the funeular joints slightly longer. Prothorax and elytra as in type, except that tubercles are fewer in number, 5—6, 7—8, 4. Under surface more closely setigero-punctate, the setae longer and paler. *Dimensions*: ♂. 16 × 6 mm.

Hab.—N.S. Wales: Yass.

Apart from the clothing this variety hardly differs from typical specimens; the difference in the length of the joints of the funicle is only appreciable when these are examined together. The following varieties also show a similar difference from the Victorian specimens in this respect.

B. var. *BLANDENSIS*, n.var.

♂. Larger than var. *fuscovittatus*; clothing much denser than *A. spinifer*, brown; on elytra forming a broad brown band on each side of suture, the inner surfaces of the tubercles of the second and third rows with whitish clothing. Head, rostrum and prothorax as in typical specimens; elytra with punctures rather more evident, tubercles rather smaller, 6, 7—8, 4—5, in the three rows. Under surface with scattered setigerous punctures, the setae black.

♀. Broader and more ovate, elytral tubercles similar, 8, 8—9, 6, in number, no tubercles on second interstice; ventral surface convex. *Dimensions*: ♂. 17.5 × 6 mm.; ♀. 19.5 × 8 mm.

Hab.—N.S. Wales: Grenfell.

C. var. *MONTANUS*, n.var.

♂. Comparatively narrow and elongate. Moderately densely clothed on prothorax and along suture with brown, more sparsely elsewhere; some obscure white clothing along median line of prothorax and sometimes of elytra, and forming obscure maculae on elytra.

Head and rostrum much as in *spinifer* but rather less deep with lateral raised angulation of rostrum more obtuse, and anterior border of supraorbital crests less convex. Prothorax as in *spinifer*. Elytra elongate with more numerous and smaller tubercles; the first row with 8—9, the basal ones mere granules, second with 7—9, increasing in size from base, third with small nodule at basal angle, often conjoined with first tubercle of row, the latter followed by 4 tubercles all smaller than in *A. spinifer*.

♀. With whitish clothing on elytra more marked; generally larger, but variable in size and more ovate in outline; elytral tubercles variable in number, as a rule more numerous than in *A. spinifer*, no tubercles on second interstice; ventral surface convex. *Dimensions*: ♂. 16 × 5.5 mm.; ♀. 17 × 7.5 mm.

Hab.—N.S. Wales: Blue Mts.

I have had three specimens, taken at Blackheath, in my collection for some years, and recently Mr. H. J. Carter has supplied me with 2 ♂ and 3 ♀, taken

at Mt. Victoria (January, 1920). Two of the series (♂—Mt. Victoria, ♀—Blackheath) are much smaller than the others, measuring: ♂. 14×5 , ♀. 15×6.5 mm., but do not present any other appreciable differences.

I have carefully compared my series of *A. spinifer* Macl., and the above varieties, without being able to find any differences that can be regarded as of specific value. The various forms are, nevertheless, readily distinguished by their general appearance. The number of tubercles on the elytra is too variable to be used as a distinctive feature; the average size of the tubercles is smaller in var. *montanus* than in the other forms. The clothing is variable, but var. *fuscovittatus* is more distinctively clothed than the others. There are slight differences also in the comparative lengths of the joints of the funicle; in the types the first two joints appear to be subequal, in other Victorian forms the second joint is slightly longer than the first, and in the varieties *fuscovittatus* and *montanus* it is more decidedly so, while in var. *blandensis*, the two joints are equal but are longer than in the types.

ACANTHOLOPHUS SORDIDUS, n.sp.

A small species allied to *A. spinifer* Macl., but with smaller, obtuse tubercles.

♂. Moderately densely covered with obscure brownish clothing.

Rostrum as in *A. marshami*, the external margins rather obtusely angulate. Head with supraorbital crests broad at base, the free margin barely notched between the two rami, anterior border strongly convex, posterior ramus briefly pointed and projecting backwards. Antennae as in *A. spinifer*. Prothorax tuberculate as in *A. marshami*, the median tubercles slightly smaller, the two anterior conjoined. Elytra with a row of granules along suture, and another less evident, along second interstice; tubercles small, noduliform, only the posterior ones distinctly conical; first row with 7, the basal one elongate, the following 3 smaller, noduliform, the last 3 becoming progressively larger and more conical, ending at edge of declivity; second row with 7, only the last 3 conical, extending further down declivity; humeral tubercle moderately large, followed by third row with 4 tubercles, the first the largest. Under surface setigero-punctate, the punctures small, not confluent, except at apex, where they tend to become reticulate. Legs simple.

♀. Larger and broader, the elytra feebly granulate between the rows of tubercles, the latter smaller than in the male, 7, 7, 4 in number in the three rows; venter convex, setigero-punctate. *Dimensions*: ♂. 14.5×5 mm.; ♀. 16×6.5 mm.

Hab.—Victoria: Jamieson (T. G. Sloane).

The species is founded on a pair received from Mr. T. G. Sloane. It is a small dingy species without any salient characteristics. It is closely allied to *A. spinifer*, and might have been considered a variety, but the difference in the size of the tubercles and to some extent the shape of the crests lead me to regard it as worthy of specific rank.

ACANTHOLOPHUS SUBTRIDENTATUS, n.sp.

A moderately small species, without outstanding characteristics.

♂. Black; moderately densely clothed with brown depressed subpubescence.

Head deeply concave in front; intercrystal ridge well marked; supraorbital crests large, broad at base, the two rami conjoined for the greater part of their length, anterior border convex, free margin with a distinct though not deep, notch anteriorly between the rami, and with a shallower indentation posteriorly,

the apex directed upwards and backwards; crests, as viewed from in front, showing considerable inclination outwards. Rostrum much as in *A. spinifer* Mael. but internal ridges slightly less convergent at base. Antennae of moderate length, comparatively stout, second joint of funicle longer than first; club rather briefly obovate. Prothorax (4×5 mm.) much as in *A. spinifer*, but tubercles smaller; median area with deep linear impression in centre not reaching base or apex; median tubercles with first two conjoined to form a ridge, the central ones forming a group of 3 or 4, hardly larger than granules, and a moderately large obtuse tubercle posteriorly, slightly backwardly projecting, but not forming an oblique ridge as in *A. spinifer*; lateral tubercles trianguliform, the two anterior completely conjoined, the posterior distinctly smaller. Elytra (9×6 mm.) with seriate punctures small and shallow, the granules inconspicuous; first row of tubercles 7—8 in number, the basal 4—5 slightly elongate, small, hardly raised, the last 2—3 conical, becoming progressively larger and more acute, ending on edge of declivity; second row with 4—6 tubercles, larger and more acute posteriorly, outwardly projecting; third row with 4 conical outwardly projecting tubercles, the humeral one distinctly smaller than the other 3. Sides with a single row of granules on each of the upper two interstices. Under surface moderately closely setigero-punctate, the setae strong, the punctures rather shallow, somewhat more rugose on apical segment. Legs simple. *Dimensions*: ♂, 14×6 mm.

Hab.—N.S. Wales: Waleha Road.

A very ordinary looking species of the *marshami* group, the structure of its crests showing a rather faint approach to the triramate crests of *A. tridentatus*; this is perhaps seen best when the head is viewed from in front. On one elytron the apical tubercle of the second row descends to a more posterior level than that of the first row. In the sculpture of the outer surface of the mandibles, this species agrees with *A. tridentatus* and differs widely from *A. spinifer* and its allies. In the latter this surface, external to the smooth inner margin, is strongly rugulose, the inner ridges being arranged in parallel series, and the spaces between the rugulose ridges bear long setae; in *A. subtridentatus* the surface is distinctly setigero-punctate, and the intervals between the punctures, apart from being less raised and rugose, are covered with much smaller punctures.

ACANTHOLOPHUS SCABROSUS Macleay.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 287.

♂. Allied to *A. marshami* Kirby, but readily distinguished by the tibial structure.

Clothing minute, inconspicuous, brown, changing to grey on inner surfaces of elytral tubercles.

Head and rostrum much as in *A. marshami*, the supraocular crests large, with the anterior ramus strongly convex anteriorly, pointed at apex, and the posterior ramus more strongly produced, projecting upwards; external rostral margins acutely angulate in middle. Antennae rather long, first joint of funicle shorter than second, club pedunculate. Thorax similar to *A. marshami*. Elytra with a row of granules on second interstice, as well as on first at base; tubercles rather larger than in *A. marshami*, first row with 7, the last 3 conical; second row with 7; third row with a rather large humeral tubercle followed by 4 conical ones. Under surface nitid, punctures small and discrete on intermediate segments, larger and semi-confluent or confluent on apical segment. Legs with intermediate tibiae

notched above apex; posterior tibiae lightly bisinuate, bent forwards and strongly thickened on underside at apex, the thickened portion composed, at any rate in part, of a closely-set brush of setae; viewed from behind the tibiae show a good deal of inward curvature. *Dimensions*: ♂. 16 × 6—17 × 7 mm.

Hab.—N.S. Wales: Mudgee, Portland, Boro.

This species can be readily recognised by the tibial structure of the male. I believe I have females before me, both from Boro and Portland; they lack the tibial structure and have the intermediate segments more coarsely punctured and the punctures confluent. They are practically indistinguishable from the female of *A. echidna*, and I hesitate to describe them as *A. scabrosus* ♀ on that account; the known habitat of *A. echidna* does not, however, coincide with that of *A. scabrosus*.

The description of this species has been drawn up from specimens in my own collection. I have, however, examined the types in the Australian Museum; the male corresponds with the above description while the female type agrees with the females commented upon above.

ACANTHOLOPHUS TRIDENTATUS MacL.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 288.

Allied to *A. marshami* Kirby, but with supraorbital crests tridentate. Black; rather densely clothed with fine brownish subpubescence, variegated with grey on elytra.

♂. Head strongly concave in front, with intereristal ridge strongly raised; supraorbital crests large, triramate, the anterior ramus rounded, projecting forwards and downwards, the median obtusely conical, projecting upwards and forwards and the posterior longer, more acute, extending upwards and backwards, the intereristal ridge running into the middle ramus. Rostrum rather deeply concave, the external margins angulate, with a short sharp tooth. Antennae with first two joints of funicle approximately equal; club rather short, stout, not pedunculated. Prothorax comparatively narrow; submedian tubercles conical, about 7 in number, the median ones exerted, the anterior slightly cristiform; lateral tubercles rather narrowly triangular, the anterior conjoined with median at base only, the median the largest. Elytra with sutural and second interstices evidently granulate, the others more obscurely granulate; with three rows of tubercles, first row with 10—11, mostly small, noduliform, but erect, the last two or three larger and acutely tuberculiform; second row with 9, the basal 4 smaller, but erect and spiniform, the apical tubercles larger and acutely conical, reaching a lower level on declivity than first row; humeral tubercle a small conical granule; third row with 4—5 acutely conical tubercles, diminishing in size posteriorly. Venter nitid, with rather long, light yellowish-brown setae, set in rather fine punctures. Legs simple.

♀. Similar, but larger and broader; elytral tubercles smaller and more numerous, 11—13, 8—11, 5—6 in number in the different rows; venter convex. *Dimensions*: ♂. 16 × 6 mm.; ♀. 16.5 × 7 mm.

Hab.—Queensland: Cunnamulla, Victoria River.

There are two males in the Macleay Museum on the name label of this species. The description of the female is taken from specimens in my own collection from Cunnamulla, given to me by Mr. A. M. Lea.

The species may be readily recognised among its near congeners by the distinctly tridentate crests.

ACANTHOLOPHUS ALPICOLA Ferg.

Ferguson, Trans. Roy. Soc. S. Aust., xxxix., 1915, p. 71.

In the original account of this species slight differences were noted between the Mt. Baldy and Mt. Kosciusko specimens. Recently (March, 1920) I have taken specimens at Mt. Kosciusko which correspond with the Mt. Baldy form. These were taken from 4000 to 5000 ft. above sea-level. Mr. Waterhouse, a month previously, secured the typical form at the summit (7300 ft.), and I think it is likely that the original specimens were secured there also. Should subsequent investigations prove that the difference between the forms is constant and is associated with a difference of habitat, it may be necessary to separate the Victorian form subspecifically. A third form also occurs in Victoria; of this, I have seen a male taken by Mr. J. E. Dixon (Jan., 1920) and a female in the collection of the National Museum; both are labelled Victorian Alps, without precise locality. This form differs in its much smaller size, but I have been unable to find any structural differences. It may be that these differences in size are only individual variations, but the types have a distinctive appearance which marks them off from the other specimens, with the exception of the male from the summit of Mt. Kosciusko. This is due, I believe, to the elytra being longer proportionally in the types, than in the other specimens.

The following are the measurements of the specimens before me:—

Mt. Kosciusko (Types)	♂. 19 × 6.5; ♀. 19 × 7.5 mm.
Mt. Kosciusko (7000 ft.)	♂. 20 × 7
Mt. Kosciusko (4-5000 ft.)	♂. 17 × 5.5; ♀. 19 × 7
Mt. Baldy	♀. 19 × 7
	♀. 18 × 7
Victorian Alps	♂. 15 × 5.5; ♀. 14.5 × 6.

ACANTHOLOPHUS TASMANIENSIS Lea.

Lea, Mitt. a.d. Zool. Mus. Berlin, 1910, p. 182.

This species is closely allied to *A. alpicola* Ferg. from the higher mountain ranges of Victoria and New South Wales, but is distinguished by the more distinct tubercles on both prothorax and elytra. Lea records that the crests may occasionally be bidentate, though as a rule the fusion is complete. No other species of the genus has hitherto been recorded from Tasmania.

ACANTHOLOPHUS DIXONI Ferg.

Ferguson, Proc. Roy. Soc. Victoria, xxvii., 1915, p. 256.

The position and relationship of this species are by no means clear. Provisionally I have placed it with *A. alpicola* and *A. tasmaniensis* in my table of species, but its faecies is quite unlike those species and more closely resembles that of the *adelaidae* group. It is, however, more strongly tuberculate than *adelaidae* or its allies, the supraorbital crests are single and somewhat differently set, and the ventral segments, especially the apical, are different.

Hab.—Victoria: Portland.

ACANTHOLOPHUS SQUALIDUS Mael.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 285; *A. truncaticornis*, Mael., *loc. cit.*, p. 286.

♂. Small; black; clothing rather sparse, brown, sprinkled with grey on prothorax and elytral tubercles.

Head with deep depression behind intercrystal ridge, the latter strongly raised; supraorbital crests subcylindrical projecting forwards and upwards, the apex almost truncate, with the posterior angle continued upwards and backwards in a short point. Rostrum widely and moderately deeply concave in front; the external margins strongly raised and convex, somewhat obtusely angulate anteriorly, sinking to base; internal ridges raised; basal foveae rather large. Antennae comparatively slender, funicle with first two joints subequal, club stout, hardly pedunculate. Prothorax considerably narrower than elytra, median area with a depression in front of middle, and with some obscure granules in centre; submedian tubercles raised, though not very large, the first produced in a short ridge, the third erect, obtusely conical, followed by two or three, more transversely arranged, the penultimate tubercle larger, projecting backwards; lateral tubercles trianguliform, the median distinctly the largest, with a smaller one conjoined anteriorly, the posterior smaller and more obtuse. Elytra more or less distinctly flattened along suture; punctures and granules fairly definite and regular; with three rows of spiniform tubercles, first row with about 8, the basal ones small and granuliform, becoming somewhat larger posteriorly, the last 3 acute conical spines; second row with 5—6 all conical tubercles, but the posterior ones larger and more acute, ending about the same level as first row; humeral tubercle moderately large conical, projecting forwards and slightly outwards; third row with 4 outwardly projecting tubercles, the first very large, the others becoming progressively smaller. Venter very feebly convex from side to side, the apical segment practically flat, without any impression, set with black decumbent setae. Legs simple.

♀. Larger and more broadly ovate; the elytra broader with a transversely wrinkled sculpture, the tubercles smaller and less acute; the venter more convex
Dimensions: ♂. 12 × 5 mm.; ♀. 14 × 6 mm.

Hab.—N.S. Wales: Merimbula, Blue Mts., Sydney, Gosford, Newcastle, Richmond River.

I have examined the types (♂. ♀.) of *A. squalidus* Macl., and compared them with the type (♂) of *A. truncaticornis* Macl., but cannot find any difference.

The species is widely distributed along the coastal districts of N.S. Wales, and is not uncommon at Blackheath on the Blue Mountains.

The species does not appear to be closely related to any other known to me; the narrow erect crests separate it from the allies of *A. marshami*, while the flat abdominal segments exclude it from the *adelaidae* group. *A. foveirostris*, with which it is associated in the table, is a very different species, the similarity in the crests having led to their present grouping.

A female taken at Berowra, near Sydney, shows a curious abnormality in the shape of a median horn or tubercle projecting from the forehead.

ACANTHOLOPHUS FOVEIROSTRIS Lea.

Lea. Mém. Soc. Entom. Belgique, xviii., 1910, p. 85.

In the shape of the prothorax this species shows an approach to *A. denticollis* Macl., to which Mr. Lea regarded it as related. I cannot, however, consider that the resemblance is any indication of its true relationship. The conspicuous intercrystal ridge separating the head and rostrum, the structure of the rostrum and the prothorax produced above the head with evident ocular lobes, all point to its

being a member of the first section of the genus. I do not know of any other species to which it can be regarded as closely related.

Hab.—South Australia: Kangaroo Island.

ACANTHOLOPHUS SQUAMOSUS Mael.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 287; *A. sublobatus*, Mael., (*partim*) *op. cit.* 1866, p. 329.

♂. Small, elongate, elytra not greatly wider than prothorax. Black; rather scantily clothed with grey depressed subpubescence.

Head concave in front; intereristal ridge low but distinct; supraorbital crests large, the anterior end rounded, projecting downwards and forwards, the posterior pointed, projecting upwards and backwards, the free border dentate in middle, so that crest appears to comprise three lobes. Rostrum with external margins strongly raised and convex in middle, sinking down to base; internal ridges distinct; basal foveae deep, their circumference broken externally. Antennae with first joint of funicle shorter than second; club stout, hardly pedunculate. Prothorax with median area linearly impressed in mid line, with a few granules, submedian tubercles low, granuliform, not set in a straight line; lateral tubercles trianguliform, the anterior completely united to middle, the posterior somewhat smaller. Elytra with regular rows of small, distinct punctures the interstices hardly granulate, except laterally; with three rows of tubercles, first row with tubercles obsolete excepting last two, the last large and conical, situated on edge of declivity; second row with 3—4 tubercles, nodular at base, conical towards apex, not present near base, and ending anteriorly to apical tubercle of first row; humeral tubercle small, nodular, conjoined with first of third row; third row with two tubercles, the second the larger and more outwardly placed. Venter flat with scattered, long, black setae, the extreme apex somewhat depressed, and with denser and shorter setae. Intermediate tibiae without a subapical notch.

♀. Differs in its broader, more ovate elytra, rather strongly produced at apex and separately or conjointly mucronate; crest similar but anterior lobe rather shorter and more obtuse; elytra with low noduliform elevations in the basal portions of the rows of tubercles, these sometimes obsolete as in male; venter feebly convex. *Dimensions*: ♂. 11 × 3.75 mm.; ♀. 13 × 5 mm.

Hab.—Victoria: Wandin, Merriyan, Emerald, Narbethong.

Closely allied to *A. nanus* but separated by the smaller and less numerous elytral tubercles; in *A. squamosus* the apical tubercle of the first row is the largest, whereas in *A. nanus* the penultimate is the largest and the apical is at a lower level. In both species there are 4 tubercles in the second row, but in *A. nanus* the first is near the second of the third row, whereas in *A. squamosus* it is much posterior to it. The apex of the elytra in *A. nanus* is more produced, and the apices separately mucronate, with a rather deep notch between; in *A. squamosus* the notch is smaller and the apices not definitely mucronate.

ACANTHOLOPHUS NANUS, n.sp.

♂. Small, elongate. Black; densely clothed with brown subpubescence, trivittate on prothorax and transversely quadrifasciate on elytra with grey; posterior femora subannulate with grey near apex.

Head widely concave in front, with two small, rather widely separated granules above; intereristal ridge present, low in centre; supraorbital crests large.

arising from a moderately broad base, the anterior angle projecting downwards and forwards, the posterior backwards and upwards, the free margin between almost unbroken except for a slight dentation in the middle; crests obliquely set, as viewed from in front, the upper end strongly directed outwards. Rostrum deeply excavate, sides strongly raised, almost rectangular in front, posteriorly sinking almost abruptly to base; upper surface with median groove bounded at base by slightly elevated, subparallel, internal ridges; basal foveae rather large, apparently closed. Antennae rather short, funicular joints comparatively short, the first and second subequal, club obovate, not pedunculate. Prothorax (3×4 mm.) with moderately well developed ocular lobes; anterior constriction well marked, not extending across median ridges; median area rather narrow, moderately deeply impressed, the median tubercles conjoined to form a ridge on either side, each ridge consisting of a moderately elevated anterior portion, merging into a somewhat confused group of three or four tubercles, more outwardly placed, followed by a short ridge hardly projecting over basal constriction, and by a small granule posterior to constriction; lateral tubercles composed of two closely united tubercles anterior to middle, and a considerably smaller, triangular one posterior to middle; sides rather coarsely punctate. Elytra (8×5 mm.) elongate, not greatly ampliate, base subtruncate, humeral angles marked by a very small nodule, apex separately, bluntly acuminate, leaving a moderately deep emargination; seriate punctures small, but well defined, granules obscured by clothing; with three rows of strong tubercles, first row consisting of six, small near base, becoming larger posteriorly and more acute, the last set on declivity and smaller than the penultimate; second row of four, strong, conical tubercles, more outwardly directed, the last on declivity anterior to last of first row; third row with a strong tubercle immediately behind humeral nodule, followed by a single large tubercle, more outwardly placed. Sides with rather conspicuous rows of punctures, the interstices without evident granules. Under surface flattened over metasternum and basal ventral segment, elsewhere gently transversely convex; moderately closely setigero-punctate, the setae black, depressed, the punctures coarser and more closely set on apical segment. Legs simple, intermediate tibiae not notched.

♀. Similar, more ovate; head and rostrum similar; prothorax with median area somewhat less depressed, the bordering ridges tending to resolve into their component granules; elytra (8.5×6.5 mm.) wider, slightly less produced apically, emargination smaller; tubercles similar but basal tubercles of first row less prominent. Ventral segments more evidently convex. *Dimensions*: ♂. 12×5 mm.; ♀. 12×6.5 mm.

Hab.—N.S. Wales: Blackheath.

Described from 4 specimens. The type male has the clothing well preserved, the others are more or less abraded and of a uniform dingy black colour. *A. nanus* comes nearest to *A. squamosus* Mael., but may be distinguished by the stronger and more numerous elytral tubercles; the other differences between the species are more fully discussed under *A. squamosus*.

ACANTHOLOPIHUS PARVULUS, n.sp.

♂. Very closely allied to *A. squamosus*, but with intermediate tibiae notched near apex. Head and rostrum similar to *A. nanus*, but intereristal ridge almost obsolete, only traceable from behind, the internal rostral ridges also hardly traceable. Prothorax (3×4 mm.) similar, but median row of tubercles smaller, the

anterior portion forming a slight ridge as in *A. nanus*, the central consisting of a confused group of small, granuliform tubercles, the posterior of a single tubercle backwardly directed, followed by a single tubercle posterior to constriction; lateral tubercles similar. Elytra (8×4.5 mm.) similar to *A. nanus*, apex rounded, with a small, narrow, moderately deep emargination; all the tubercles smaller than the corresponding ones in *A. nanus*, first row with only 3 tubercles, corresponding to the three apical ones, and noticeably smaller and less elevated; second row with 4; third with 2. Under surface similar, but with longer setae. Intermediate tibiae with small, but evident subapical emargination. *Dimensions*: ♂. 12×4.5 mm.

Hab.—N. S. Wales: Mittagong.

I have only a single male before me; this was received some years ago from Mr. H. J. Carter, in whose collection is another specimen. Though closely allied to *A. squamosus* Mael. and *A. nanus*, the present species may be distinguished from both by the subapical emargination of the intermediate tibiae.

ACANTHOLOPHUS ADELAIDAE Waterhouse.

Waterhouse, Trans. Ent. Soc. Lond., (2), iii., 1854, p. 76; Macleay, Trans. Ent. Soc. N. S. Wales, i., 1865, p. 281; *A. angasi*, Macleay, *loc. cit.*, p. 286; *A. approximatus*, Mael., *loc. cit.*, p. 283; *A. sublobatus* Mael. (*partim*), *op. cit.*, 1866, p. 329.

♂. Rather small, comparatively narrow. Black; moderately densely clothed with brown depressed pubescence, feebly maculate with grey on elytra.

Head concave in front, with strongly raised intercrystal ridge; supraorbital crests consisting of two closely conjoined portions, arising from a moderately narrow base, the anterior branch only separate at extreme apex which is directed upwards and forwards, the anterior margin not strongly convex, the posterior branch longer, pointed almost directly upwards. Rostrum rather deeply concave, the lateral margins strongly angulate in front of middle; internal ridges prominent, at first oblique, then parallel to base; basal foveae small, but distinct, closed. Antennae of moderate length, the first two joints of funicle approximately equal, club moderately long, stout, not pedunculate. Prothorax moderately wide, median area deeply impressed along median line, with a few, fine, scattered granules, similar granules present on sublateral areas; submedian tubercles erect, obtuse, moderately large, but varying in size, not set in single series, the anterior tubercles somewhat elongate and slightly cristiform, the central ones exerted, the prebasal long, projecting directly backwards over the basal constriction; lateral tubercles subtriangular, the median the largest, with a small conjoined anterior tubercle, the posterior somewhat smaller than median. Elytra with fairly evident punctures and rows of small somewhat indefinite granules; first row of tubercles about 10 in number, the basal ones small, scarcely larger than granules and often indistinct, the others becoming larger, but only the last 2 distinct, the apical decidedly the largest and acutely conical; second row with 6—7, all distinct, though small and rounded near base, the last 3 stronger and acutely conical; humeral tubercle small, noduliform; third row with 5 rather small tubercles, obtuse, hardly conical. Ventral segments clothed rather sparsely with moderately long light setae, denser at sides, arising from indistinct punctures; apical segment gently convex antero-posteriorly, with posterior face flattened and nitid. Legs simple.

♀. Resembling ♂, but more robust; crests similar but apices of rami more distinctly separate; elytra similar but broader, with smaller tubercles, the basal ones hardly distinguishable from the granules, the apical ones smaller and less acute than in the ♂. Venter convex, apical segment not as in ♂. *Dimensions*: ♂. 14 × 5 mm.; ♀. 15.5 × 6 mm.

Hab.—South Australia: Adelaide, Mt. Lofty, Kangaroo Island; Victoria: Mt. Evelyn, Bullarook, Macedon, Ararat.

I examined the type of this species when in England, and have a note that it is a large female of the common Adelaide species.

The type of *A. angasi* Macl. is a male and agrees with males of *A. adelaidae* Waterh.; the crest on one side, however, is deformed and not bilobed.

On the name label of *A. approximatus* Macl. in the Macleay Museum are two males; one of these corresponds to South Australian specimens, except that the tubercles of the second row are slightly stronger at base of elytra; the other also has the elytral tubercles, particularly the basal tubercles of the second row stronger than in *A. adelaidae*; the tubercles number 9, 7—8, 4—5, and 9, 8, 5 in the two specimens. In view of the variability in respect to size and number of tubercles so common in species of *Acantholophus*, I cannot regard these specimens as specifically distinct, and must sink *approximatus* as a synonym of *adelaidae*.

There are before me numerous specimens from Victoria which I cannot separate from South Australian specimens; it may be remarked that Victorian specimens have hitherto been regarded as *A. approximatus* and South Australian specimens as *A. adelaidae*. The series exhibits a certain amount of variation; thus specimens from Bullarook and Macedon differ in having the elytral tubercles noticeably smaller and noduliform, and in the Macedon specimens the joints of the funicle are distinctly shorter. Specimens from Mt. Evelyn agree in the size of the tubercles with specimens from South Australia. In all of these there are slight differences from South Australian specimens in the lower intercrystal ridge, in the slightly more obtuse supraorbital crests, and in the slightly narrower prothorax with submedian tubercles, especially the penultimate, shorter. Other specimens from Mt. Evelyn differ in having the rami of the crests completely fused so that the crest appears single.

Specimens from Ararat are indistinguishable from South Australian specimens.

A pair (♂. ♀.) from Inglewood, Victoria, collected by Mr. J. E. Dixon, perhaps represent a variety; they differ in having the crests more distinctly biramate, the anterior branch being short and erect, and the posterior more slender and slightly recurved.

ACANTHOLOPHUS HALMATURENUS Ferg.

Ferguson, Trans. Roy. Soc. S. Aust., xxxix., 1915, p. 69.

Though closely allied to *A. adelaidae* Waterh., the differences in the supra-orbital crests and the wider, noticeably granulate prothorax appear sufficient to warrant the separation of this species.

Hab.—South Australia: Kangaroo Island.

ACANTHOLOPHUS ANGUSTICOLLIS Ferg.

Ferguson, Proc. Roy. Soc. Victoria, xxvii., 1915, p. 259.

This species is closely allied to *A. adelaidae* Waterh., but is of a more elongate form, with narrower prothorax and more numerous and more closely placed

elytral tubereles. The division of the supraorbital crests into two rami is hardly discernible.

Hab.—Victoria: Portland.

ACANTHOLOPHUS GRAVICOLLIS Macl.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1866, p. 329.

♂. Size moderate. Black; rather sparsely clothed with brownish subpubescence.

Head concave in front, rather densely clothed; intercrystal ridge strongly developed; supraorbital crests biramate, arising from a comparatively slender stalk, the anterior branch short and rather obtuse, projecting upwards and forwards, the posterior much longer and more slender, curving upwards and somewhat backwards. Rostrum rather deeply concave, the external margins triangularly raised and strongly angulate about middle; internal ridges short, oblique, widely separated at base; basal foveae small, deep. Antennae of moderate length; second joint of funicle hardly longer than first; club moderately elongate, pedunculate. Prothorax with median area longitudinally impressed in middle, with a few rather obscure granules; submedian tubereles erect, not in straight line, the first strongly raised in a securiform crest projecting well over the head, the second erect, conical, the third and fourth somewhat more outwardly placed, erect and conical, fifth external to fourth, low and granuliform, followed by one or two granules irregularly arranged, sixth projecting backwards but smaller than in *adelaidae*; lateral tubereles subtriangular, the anterior considerably smaller than the middle to which it is joined at base, the posterior nearly as long as the middle. Elytra with rows of fairly definite punctures, transversely confluent so as to give sculpture a somewhat wrinkled appearance; granules small but evident; first row of tubercles consisting of granules in basal portion, becoming somewhat larger and noduliform about middle, and ending with 2-3 definite tubereles, the last the largest and strongly conical; second row with 8, the basal ones small and obtuse, the posterior ones larger and more conical, ending on a lower level than first row; humeral tuberele distinct, conical, outwardly projecting; third row with 5 conical tubereles becoming smaller and less acute posteriorly. Venter subnitid, with rather sparse pale setae; apical segment rather convex antero-posteriorly. Legs simple; posterior tarsi rather shorter and stouter than usual.

♀. Larger and broader. Head and rostrum similar, the external margins with a short tooth at angulation. Elytra produced at apex, and rather strongly mucronate; sculpture similar, but tubereles slightly smaller, but distinct. Venter convex. *Dimensions*: ♂, 14 × 5.5 mm.; ♀, 17 × 6.5 mm.

Hab.—South Australia: Port Lincoln.

Though closely allied to *A. adelaidae*, this species can be distinguished by the more distinctly branched supraorbital crests and by the anterior tuberele of the submedian prothoracic row being raised in a strong crest.

The following appear to represent a variety rather than a distinct species.

Var.

♂. Very similar to typical specimens, but elytral granules more distinct and tubereles smaller.

♀. Elytral granules much more evident; tubereles smaller and granuliform with the exception of apical tuberele of first row and last 3 of second, and these

noticeably smaller than in typical specimens; only first two tubercles of third row distinct. *Dimensions*: ♂. 13.5 × 5 mm.; ♀. 16.5 × 6.5 mm.

Hab.—South Australia: Wirra (Mallee District), Pinnaroo.

ACANTHOLOPHUS KREFFTI Mael.

Macleay. Trans. Ent. Soc. N.S. Wales, i., 1865, p. 288.

♂. Size moderate; densely covered with light brown subpubescence, variegated with grey.

Head deeply concave, with strongly raised intercrystal ridge; supraorbital crests composed of two long, erect, spinose processes, projecting forwards and upwards, conjoined at base, the intercrystal ridge running into the anterior process, the posterior situated farther outwards. Rostrum not very deeply concave above, the external margins with a strong sharp spine about middle; internal ridges raised, convergent; basal foveae rather large. Antennae with first joint of funicle longer than second; club not pedunculate. Prothorax furnished with a row of long erect spines on each side of median area; the first projecting over the head, then curved upwards, the others erect, the sub-basal the longest; lateral margins with a single, large, acute, outwardly projecting spine in middle, and a small acute spicule posteriorly. Elytra with moderately large granules, obscured by clothing, larger on second interstice and spiculiiform near declivity; tubercles strongly spiniform, first row with 6, the basal ones small, but erect, and bearing long setae, the posterior two or three large and acutely spiniform; second row with 6, all acute spines, but larger posteriorly and descending to a lower level on declivity; humeral angle with a large acute spine; third row with 4 acute spines, the first much the largest, the fourth a small spicule. Venter with rather sparse black setae in middle and traces of denser yellowish subpubescence at sides. Intermediate tibiae with a rather feeble subapical notch; posterior tibiae with a strong apical process projecting forwards from anterior margin.

♀. Larger and more ovate, elytra with more numerous tubercles, second interstice with two or three acute spines in front of declivity; first row with 7 spines, only the last 3 large; second with 7; third with 4. Venter convex. Legs simple; posterior tibiae as in ♂, but process rather smaller. *Dimensions*: ♂. 14 × 5.5; ♀. 16 × 7.5 mm.

Hab.—Queensland: Peak Downs.

The above description is taken from the Macleay Museum specimens, but probably the Australian Museum specimens should be regarded as the actual types.

Apart from the following species, *A. krefftii* Mael. seems to have little relationship to other described forms. It is one of the most strongly spinose species, and in this respect resembles the western members of the genus.

ACANTHOLOPHUS DODDI, n. sp.

Closely allied to *A. krefftii* Mael., but smaller, with less acute tubercles.

♂. Small, elongate, subcylindrical. Black, more or less densely clothed with greyish subpubescence.

Rostrum rather deeply excavate anteriorly; external margins raised anteriorly into a strong, subtriangular, acute spine; internal ridges low, but distinct, basal foveae rather shallow, distinct, closed externally. Head concave in front; supraorbital crest arising by a rather narrow stalk, divided into two rami, the

anterior very short, projecting almost directly forwards, the posterior somewhat longer and curved upwards; intercrystal ridge low in centre, running into base of anterior ramus. Antennae with scape stout, the funicle with joints rather short, the first and second subequal, the club rather briefly obovate. Prothorax (4×5 mm.) with a row of upstanding, moderately large, obtuse tubercles, in single series, on each side of median area; lateral margins with a strong spiniform tubercle anterior to middle, conjoined with a smaller tubercle anteriorly, and with a much smaller tubercle, less than half as long, posterior to middle. Elytra (9.5×5 mm.) subparallel on sides, rather strongly convex transversely; derm asperate, with punctures confused, often transverse, and rows of granules, rather confusedly set; with three rows of small tubercles, the basal ones small, the others becoming progressively larger and more acutely conical, also with two or three tubercles on second interstee above declivity; first row with 9 tubercles, the last 3—4 conical, ending on edge of declivity; second with 7, extending farther posteriorly, almost all conical, spiniform, though smaller anteriorly; third with a strong, conical, humeral tubercle, outwardly projecting, and 4 others all conical, becoming smaller posteriorly and continued as a row of obsolete granules. Sides with rows of rather obscure granules on interstices. Under surface flattened, set with long black setae. Intermediate tibiae with a small, narrow, pre-apical emargination; posterior tibiae with an anteriorly projecting process at apex, concave on under surface. *Dimensions*: ♂. 14×5 mm.

Hab.—N. Queensland (F. P. Dodd) .

I have seen but a single specimen of this species, and though not in good condition I have described it, as it is evidently distinct from *A. krefftii*, its nearest ally. From the latter it is distinguished by the smaller, less spiniform supra-orbital crests, and by the smaller elytral tubercles.

I received my single specimen some years ago from Mr. Dodd, of Kuranãa, and though without locality label, believe it comes from the hinterland behind Cairns, either from Mareeba or the Atherton-Herberton district.

ACANTHOLOPHUS HYSTRIX Bohem.

Bohemann, Schönh., Gen. Spec. Cure. vii., 1, 1843, p. 78; Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 273.

♂. Small, ovate, strongly spinose. Black; densely clothed with small squames, whitish or rich brown; head with two narrow white lines and sprinkled with white on the sides; prothorax with a whitish median vitta, more creamy in centre, with sublateral vittae coppery-brown, sides with a white vitta above and sprinkled with white below; elytra with median vitta mostly coppery-brown, mixed with white anteriorly, the brown ending on declivity, thence sprinkled with white, with wavy vittae of coppery-brown between the rows of tubercles, with patches of white at the posterior ends of the vittae, sides with a wavy vitta of white along middle and a less distinct one along lower margin; sides of sternal segments with dense white squames above, the rest of the under surface sprinkled with white.

Head concave in front, intercrystal ridge low in centre; supraorbital crests composed of two separate slender spines, the anterior directed upwards and very slightly forwards, the posterior almost directly upwards and longer than the anterior, the intercrystal ridge running into the base of the anterior ramus. Rostrum hardly excavate, the lateral margins hardly raised, not angulate; internal

ridges little evident, convergent towards base. Antennae slender, first two joints of funicle subequal, club with moderately long peduncle. Eyes rounded. Prothorax with submedian row of tubercles in single series, the tubercles long, slender, erect, like a palisade, the anterior tubercle projecting overhead and upturned at apex, the second, third and fourth with a slight backward curve, the third the largest, the fifth much smaller than the others, no tubercle posterior to basal constriction, the latter ill-defined; lateral margins with a long, slender, curved spine in middle, with a small, conjoined anterior one, and a short obtuse tubercle posteriorly, its apex bent backwards. Elytra rather strongly rounded on sides, strongly convex antero-posteriorly and from side to side, strongly declivous to base of prothorax, and basal margin set with three, small, forward-projecting tubercles at the ends of the first, third and fifth interstices; the first, second, fourth and sixth interstices with rows of small but evident granules, much displaced by the tubercles on the intervening interstices; with three rows of strong spiniform tubercles, the first with 6, all upright spines, the posterior ones very long and curved; second with 4 similar to those of first row, but larger and ending on same level; humeral tubercle placed at junction of fifth, sixth and seventh interstices, in line with tubercles of second row, large and spiniform, with two small granules anterior to it; third row with two outwardly-projecting spines. Venter flat, sparsely and shallowly setigero-punctate, with whitish squames at sides of segments. Legs simple.

♀. As in ♂, but more strongly rounded on sides; venter convex and more evenly clothed with white squames. *Dimensions*: ♂. 10.5 × 5 mm.; ♀. 9.5 × 4.5 mm.

Hab.—Western Australia: King George Sound.

A second female differs in being larger, with proportionally longer elytra and more numerous tubercles,—7, 5, 5; the dimensions are 12 × 6 mm.

Though associated with *A. bivittatus* Bohem., it is not very closely allied to that species; it is closest in appearance to *A. krefftii* MacL., but it is really a species *sui generis*.

ACANTHOLOPHUS BIVITTATUS Bohem.

Bohemann, Schönh. Gen. Spec. Cure., vii. (1), 1843. p. 74; Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865. p. 274.

Small, elongate. Black; sparsely clothed with dark subpubescence, with a narrow median creamy vitta, bifurcate on head and extending almost to edge of declivity; with creamy macules on elytra, on declivity between first and second rows of tubercles and towards lateral margins; sides with a white vitta extending along middle of prothorax and along lower margin of elytra.

Head concave in front with two small granules above; intercrystal ridge low; supraorbital crests composed of two short stumpy processes separate practically to base, the intercrystal ridge running into the anterior one. Rostrum rather deeply concave; external margins somewhat raised, obtusely angulate in front, and sinking to base; internal ridges moderately long, distinct, convergent to base. Eyes ovate. Antennae slender, first and second joints of the funicle subequal, club short, not pedunculate. Prothorax with median area moderately deeply depressed; submedian tubercles small, erect, subconical, not in a straight line, the central ones being more outwardly placed; lateral tubercles acute, subspiniform, the median the longest, the anterior half as long as median, conjoined,

the posterior small, more triangular in shape. Elytra with rather large punctures and evident granules, but structure obscured by the tubercles; sutural interstice without granules; second with a row of erect conical granules, larger posteriorly, not extending down declivity; with three rows of tubercles, first row with 5—6, the basal ones erect, conical, the rest acute and spiniform; second row with 5, all acute, but larger posteriorly and extending further down declivity than first row; humeral tubercle small, acute; third row with 2 large outwardly projecting acute tubercles. Venter nitid; gently transversely convex; with a few scattered setigerous punctures, and a small patch of white squames on each side near apex. Legs simple.

♀. Very similar; second interstice with line of granules ending above declivity in a small tubercle; venter more convex. *Dimensions*: ♂. 11 × 4 mm.; ♀. 11.5 × 4.5 mm.

Hab.—Western Australia: King George Sound.

The position of this species is doubtful, as it is not closely allied to any known to me. I have placed it among the spinose species, but the lateral prothoracic tubercles are hardly spiniform; at the same time it is not at home among the species comprising the tuberculate group. In general appearance it is not unlike a species of *Hyborrhynchus*.

ACANTHOLOPHUS TRIBULUS MacL.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1866, p. 330.

♂. Small, elongate. Densely clothed with short brown subpubescence, the prothorax and base of elytra albo-vittate along middle line, and elytra maculate with white; sides of prothorax with rather sparse white clothing, and inferior border of elytra albo-vittate.

Head concave in front; intercrystal ridge distinct; supraorbital crests biramate, the anterior branch projecting forwards with apex upturned, the posterior curved upwards with inclination backwards. Rostrum short, widely concave above; external margins with a short, conical tubercle in middle; internal ridges well marked, oblique, strongly convergent. Antennae slender, funicle with second joint slightly longer than first; club elongate, hardly pedunculate. Prothorax with median line impressed in posterior two-thirds; submedian tubercles moderately large obtuse nodules, not in single series, the third more outwardly placed, and a small nodule present external to the fourth; lateral tubercles subcylindrical, the median the largest, slightly recurved at apex. Elytra with rather obscure, somewhat transverse punctures; granules moderately distinct; with three rows of tubercles, the first row with 10, the basal ones small and noduliform, the others conical, becoming larger posteriorly; second row with 9, all conical, longer and more acute posteriorly, ending on a level with first row; humeral angles with moderately large conical tubercle; third row with 5—6 tubercles, conical, becoming smaller posteriorly. Venter flat, nitid, with rather long, scattered decumbent setae, mainly light-coloured. Legs simple. *Dimensions*: ♂. 12 × 4.5 mm.

Hab.—South Australia: Port Lincoln.

The above description is taken from the specimen in the Macleay Museum, but this may not be the type.

I have placed this and the following species among the spinose species, but they have no near relation to the other spinose species, and in general appearance more nearly resemble *A. adalaidae*.

ACANTHOLOPHUS SIMULATOR Ferg.

Ferguson, Trans. Roy. Soc. S. Aust., xxxix., 1915, p. 71.

I am very doubtful whether this species should be regarded as more than a variety of *A. tribulus* Mael. The supraorbital crests are, however, stouter, and the tubercle on the external rostral margins longer and more acute; the prothorax has the first tubercle of the submedian row more elongate, projecting farther over the head; the lateral tubercles are shorter and stouter. The elytral granules are also more distinct.

Hab.—South Australia: Kangaroo Island, Lucindale.

ACANTHOLOPHUS MASTERSI Mael.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1866, p. 327; *A. posticalis*, Mael., *loc. cit.*, p. 327.

♂. Comparatively narrow, elongate, strongly convex. Somewhat sparsely covered with coppery brown, subsquamose clothing, more densely vittate with white, a central vitta extending from head to about middle of elytra, a second between first and second rows of tubercles on apical half of elytra, a third between second and third rows at base; sides albo-vittate along middle of prothorax and lower border of elytra, with some macules above on the elytra; sternal segments with depressed white subsquamose clothing, thickest at the sides.

Head comparatively narrow, convex, rather feebly impressed in front, with a deeper fovea anteriorly; intercrystal ridge low, hardly traceable, supraorbital crests rather closely set, single, acute, spiniform, without any outward divergence; eyes closer together and nearer front of head than usual. Rostrum shallowly excavate, external ridges hardly raised, somewhat convergent to base; median line lightly impressed; internal ridges low; basal foveae small, rather shallow. Antennae long and slender; funicle with second joint evidently longer than first; club pedunculate. Prothorax little produced above, with ocular lobes barely traceable; submedian tubercles erect, conical or spiniform, set in single series, the median ones somewhat larger than the others; lateral margins with an acute, slender, rather strongly recurved spine in front of middle, with a small conical tubercle at base anteriorly, postero-lateral tubercle small, obtuse. Elytra strongly declivous, and with lateral margins greatly convergent at base, but without any humeral angulation; punctures shallow, and granules almost obsolete; with three rows of strong spiniform tubercles; first row with 6, all acute spines, but middle ones rather smaller than the others, the apical spine long and acute; second row with 4 isolated, strong, acute spines; third row with 2, somewhat smaller but acute, and with a small tubercle anteriorly. Venter with punctures indistinct, with scattered, decumbent, white setae, condensed at sides to form a series of spots. Legs simple.

♀. (*A. posticalis* Mael.). Larger, with much broader and more convex elytra; more densely clothed with mingled grey and brown, rather feebly variegate with white; median line and base of elytra with a whitish vitta.

Head, rostrum and prothorax as in ♂. Elytra ovate, very strongly convex; strongly declivous at base, with shoulders rounded off; apex rather strongly mucronate; tubercles much smaller and more numerous than in ♂; first row with 10, the basal one fairly large, the others small and obtuse, becoming larger posteriorly, the apical one spiniform, though smaller than in ♂; second row with 8,

all small; third with 5, also small, the second moderately distinct, the others hardly more than nodules. Venter rather strongly convex. *Dimensions*: ♂. 14 × 5mm.; ♀. 16 × 7 mm.

Hab.—Western Australia: Stirling Ranges.

The above description is taken from the Macleay Museum specimens, of which there are 2 ♂ under *A. mastersi* and two ♀ under *A. posticalis*. It is uncertain whether these or the Australian Museum specimens are the actual types. There can be no doubt that Macleay was misled by the great difference in the sexes, in describing them as two distinct species.

ACANTHOLOPHUS GLADIATOR Pasce.

Pascoe, Journ. Linn. Soc. xii., 1873, p. 6, plate II., fig. 3-3a.

♂. Black; rather densely clothed with minute sandy squames, somewhat lighter on sides.

Rostrum widely and shallowly concave, lateral margins hardly raised, rectangular anteriorly; internal ridges short, little prominent; basal foveae rather shallow, closed. Head with intereristal ridge low, V-shaped; supraorbital crests short, single, acutely pointed, set at right angles to plane of head. Antennae with first joint of funicle shorter than second; club moderately elongate. Thorax with anterior tubercles of submedian row forming a strong securiform crest projecting over head, followed by a row of 4 large conspicuous tubercles in single series; lateral tubercles comprising a large median spine and a much smaller posterior one, about half its size. Elytra with punctures obsolete, and granules small; with three rows of spiniform tubercles, first row with 5—7, anterior ones small, the apical two large and spiniform, ending at declivity; second with 4—5, all large, increasing in size to declivity, and ending half way down, with a smaller, acute, preapical tubercle or spine on either side; humeral tubercle large and spiniform; third row with two tubercles only. Ventral surface with punctures obsolete; apical segment slightly rugose at extreme apex. Intermediate tibiae with subapical notch.

♀. More robust with smaller and more numerous elytral tubercles; first row with 10 mostly small, the apical two large, acute, spines, the last one situated halfway down declivity; second row with 6, not including humeral and preapical, spiniform but shorter than in ♂; third with 2; remaining interstices with evident granules; intermediate tibiae without notch. *Dimensions*: ♂. 18 × 7 mm.; ♀. 19.5 × 8.5 mm.

Hab.—Western Australia: Mullewa, Cunderdin, Kellerberrin.

The specimen from Kellerberrin possibly represents a variety, as the apical ventral segment is set with larger and coarser punctures; Pascoe describes the abdomen as "sparse punctato," which corresponds better with the Mullewa male.

The description of the female is from a specimen taken by Mr. T. G. Sloane at Cunderdin, near Kellerberrin, and probably conspecific with the Kellerberrin male; the supraorbital crests in this specimen are minutely bifid at the extreme apex.

ACANTHOLOPHUS NIVEOVITTATUS Blackb.

Blackburn, Proc. Linn. Soc. N.S. Wales, v., 1890, p. 576.

This species appears to be fairly widespread in Western Australia, at any rate in the inland districts. There is considerable difference in size between

some of the specimens. The scape is long and relatively slender, and the first joint of the funicle approximately equal to the second. The supraorbital crests have the middle branch small and often reduced to a small spicule or even absent; the intercrystal ridge curves backwards into the base of the posterior ramus, the anterior arising at a distinct angle.

Hab.—Western Australia: King George Sound, Cunderdin, Tenindewa, Cue, Mullewa, Southern Cross, Yilgarn (type locality).

ACANTHOLOPHUS FRANKLINENSIS Blackb.

Blackburn, Trans. Roy. Soc. S. Aust. 1890, p. 92.

Under this species I place specimens of a species of *Acantholophus* from Yeelanna, South Australia; the type itself I have not seen, and do not know of its whereabouts; Blackburn stated that it was in the collection of Mr. J. Anderson, of Port Lincoln.

While closely allied to *A. niveorittatus* Blackb., the species differs in having the basal tubercles of the first row smaller and closer together, there being 8—9 tubercles in the row, with only the last 3 acutely spiniform, whereas in *A. niveorittatus* there are 5—6 and the basal ones, though smaller, are conical; the granules on the other interstices are also larger. The antennae are not so slender as in *A. niveorittatus*, and the supraorbital crests have the middle branch longer and more developed.

Hab.—South Australia: Franklin Harbour, Yeelanna.

VAR. Specimens from Ankertell, Western Australia differ somewhat from the Yeelanna specimens. The clothing is lighter brown, with the pale squames a pure white, in some places with a pink tinge; the elytral tubercles are rather smaller, and more numerous in the first row (10—11); the granules, particularly on the first and second interstices, are also smaller and less prominent.

ACANTHOLOPHUS HYPOLEUCUS Bohem.

Bohemann, Schönh., Gen. Spec. Cure., vii. (1), 1843, p. 76; Macleay, Trans. Ent. Soc. N. S. Wales, i., 1865, p. 275.

♂. Black: moderately densely clothed with brown, depressed subpubescence; with white subsquamose clothing forming a median vitta from head to apex of elytra, irregularly disposed macules on elytra, and an interrupted vitta along lateral margin of disc of elytra; sides of prothorax and a broad vitta along the inferior margin of sides of elytra also clothed with white; under surface and legs with longer white subpubescence more sparsely disposed.

Head rather shallowly excavate in front; intercrystal ridge low; supraorbital crests composed of two slender, curved rami, distinct almost to base, the anterior curved forwards and upwards, the posterior upwards with a slight inclination backwards. Rostrum shallowly concave, almost flat above, with a somewhat indistinct median carina; lateral margins with a conical tubercle in middle; internal ridges hardly raised, widely separated at base; basal foveae distinct, closed. Antennae long and slender, first joint of funicle about equal to second, club with a moderately long peduncle. Prothorax with submedian tubercles in single series, erect, spiniform, slightly decreasing in size posteriorly; lateral tubercles spiniform, the middle one long, curved slightly back at apex, conjoined anteriorly with a smaller spine, the posterior spine well developed and acute, but distinctly

smaller than median one. Elytra with small but evident granules, and with three rows of tubercles; first row with 8, the basal 5 small, rounded, the last 2—3 larger and acutely spiniform; second row with 6, all spiniform but larger posteriorly; humeral tubercle large and conical, with a much smaller granule anterior to it; third row with 3 large acute spines, the first the longest; a pair of acute subapical spines also present. Ventral surface with somewhat sparse, white, depressed, subsetose pubescence, mixed with some darker setae, arising from shallow punctures. Legs simple.

♀. Similar, but broader in the body; ventral surface convex. *Dimensions*: ♂. 15 × 5 mm.; ♀. 16 × 7 mm.

Hab.—Western Australia: King George Sound, Esperancee.

In general appearance resembling a slighter form of *A. niveovittatus*, the present species may be distinguished by the more slender, biramate, supraorbital crests. From *A. crassidens* it may be separated by the different crests and distinct, subapical, elytral spines.

ACANTHOLOPHUS CRASSIDENS MacL.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 276.

♂. Moderately large; black, with very minute scanty brownish clothing and with whitish subsquamose pubescence, forming interrupted vittae along median line of prothorax and elytra, along lateral margins of elytra, and on sides of prothorax and along inferior border of sides of elytra.

Head concave in front, with strongly raised intereristal ridge; supraorbital crests large, biramate, the intereristal ridge running into the base of the posterior branch which is stout at base and tapers to a fine point, curving outwards and upwards with a slight inclination backwards, the anterior branch much shorter and blunter, projecting forwards with the apex briefly upturned, crests, as viewed from in front, strongly outwardly divergent. Rostrum rather deeply concave above, with a narrow median carina in depth; lateral margins with a strong conical tubercle about middle; internal ridges little distinct, rather widely separated at base. Antennae long and slender, first joint of funicle shorter than second, club with rather long peduncle. Prothorax with submedian row of tubercles in single series, approximately equal in size, the first stouter but not longer than the others, all erect, but rather obtuse, an additional small tubercle present external to the fourth in the row; lateral tubercles much as in *A. hypoleucus*, but somewhat shorter and less acute, the median one acutely spiniform and rather strongly curved backwards, with a small one conjoined anteriorly, and the posterior shorter and blunter than the median. Elytra broader and flatter than in *A. hypoleucus*, with three rows of spiniform tubercles, the first row with 6, the basal ones smaller and rounded, the apical one large and acute; second row with 6, all acute, but the posterior ones larger and more spiniform; humeral tubercle large and conical; third row with 3 large spiniform tubercles, outwardly projecting, the first the largest; also with a pair of small, spiculiiform, subapical tubercles, sometimes with a row of spicules extending up declivity to last tubercle of third row. Venter with clothing and punctures as in *A. hypoleucus*. Legs simple.

♀. Similar, more robust and convex on ventral surface. *Dimensions*: ♂. 16 × 6 mm.; ♀. 17 × 7.5 mm.

Hab.—Western Australia: King George Sound.

Another male labelled Albany (practically the same locality), differs somewhat in the crests, in the antennae having the first joint of the funicle rather longer and not much shorter than the second, and in the larger granules and more numerous tubercles on the elytra; the latter number 9—10, 6—8 and 3—4 in the three rows.

The species is allied to both *A. hypoleucus* Boh. and *A. niveovittatus* Blackb. From the former it may be distinguished by its larger size and stouter supra-orbital crests, from the latter by the biramate, not triramate crests, less convex elytra and much smaller subapical spines.

In the Macleay Museum there are two males on the name label of this species. The elytral tubercles number 7—9, 5 and 3.

ACANTHOPHUS SUTURALIS Bohem.

Bohemann, Schönh., Gen. Spec. Curc., vii. (1), 1843. p. 72; Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 277.

Head concave in front; intereristal ridge not very distinct; supraorbital of a metallic coppery colour; median line of prothorax with a somewhat indefinite whitish vitta; elytra with a longitudinal white spot at base and another anterior to middle on suture, sides of prothorax and lower border of elytra vittate with white, the latter vitta not reaching base of elytra.

Head concave in front; intereristal ridge not very distinct; supraorbital crests biramate, the anterior branch short, rather stout, truncate at apex, projecting forwards, posterior branch nearly twice as long as anterior, and more slender, running upwards with a slight backward curve. Rostrum rather deeply and widely concave, the lateral margins raised, rectangulate anteriorly, without a definite tubercle; internal ridges little raised, very oblique, convergent to base; basal foveae distinct. Antennae long, rather slender, first joint of funicle shorter than second, club with a moderately long peduncle. Prothorax with median lobe well produced; submedian tubercles irregularly set, the apical tubercle larger than the rest, suberistaform, second small, conical, third larger, erect, subconical, fourth and fifth small, granuliform, transversely placed, sixth larger, obtuse, projecting somewhat backwards, basal tubercle smaller, erect; lateral margins with a strong median spine, projecting outwards and curving strongly backwards, conjoined anteriorly with a smaller tubercle, posterior tubercle absent, the lateral margins indistinctly ridged and convergent towards base. Elytra with rows of distinct granules, those on first interstice large at base becoming smaller posteriorly and practically lost on the declivity; first row of tubercles 8 in number, small, obtuse but distinct, the basal one rather larger and the apical two large and spiniform; second row with 5—6 conical tubercles, the apical 3 about twice as large as the basal ones and spiniform, also with one or two much smaller tubercles immediately behind humeral tubercle; humeral tubercle moderately large and spiniform; third row with 4 acute tubercles, the first slightly the largest. Ventral segments strigose, reticulate-punctate, the sculpture obsolete on first visible segment and less marked on second. Legs with strong subapical notch on intermediate tibiae; posterior tarsi comparatively short and broad.

♀. As in male, but larger and more robust; prothorax with apical tubercle of submedian row larger and spiniform, the apex curved backwards; elytra with tubercles more numerous, first row with 10, the last 3 spiniform, second with 7 and 1 smaller one at base, third with 4, the last considerably smaller. Venter

convex, punctures subobsolete, better marked on apical segment; legs simple, *Dimensions*: ♂. 18 × 6.5 mm.; ♀. 21 × 9 mm.

Hab.—Western Australia: Perth, Swan River, Guildford, Harvey.

A large species readily recognised by the first tubercle of the prothoracic submedian rows being larger than the others. This character is also found in *A. lateralis* Bohem., to which *A. suturalis* is closely allied; the distinctive characters separating the two species are given under *A. lateralis*.

ACANTHOLOPHUS LATERALIS Bohem.

Bohemann, Schönh., Gen. Spec. Curc. vii. (1), 1843, p. 75; Macleay, Trans. Ent.

Soc. N.S. Wales, i., 1865, p. 277; *A. spinosus*, Macleay, *loc. cit.*, p. 274.

Close to *A. suturalis* Bohem., but shorter and relatively stouter. Black; with brown subsquamose clothing, vittate with white or cream, a median vitta extending from head to edge of declivity of elytra, a short vitta down declivity between first and second rows of tubercles, and a vitta at base of elytra between second and third rows; sides with a prominent white vitta along middle of prothorax, and lower margin of elytra.

Head, rostrum, antennae and prothorax as in *A. suturalis*. Elytra shorter, oval in shape; granules not conspicuous except for a row of large granules along each side of suture; tubercles fewer in number and farther apart, first row with 6, the basal 4 obtuse but decidedly larger than in *A. suturalis*, the basal tubercle being larger than the others, the apical two, strong, acute spines; second row with 5 all large and distinct, but the basal 2 smaller and less acute than the others; humeral angle with 2 obliquely set, rather small, tubercles; third row with 2—3 large spiniform tubercles.

♂. Venter strigosely reticulo-punctate as in *A. suturalis*; intermediate tibiae notched.

♀. Venter convex, sculpture obsolete; intermediate tibiae only shallowly notched. *Dimensions*: ♂. 16 × 6.5 mm.; ♀. 16 × 6.5 mm.

Hab.—Western Australia: Swan River, King George Sound.

Bohemann's lengthy description leaves no doubt as to the identity of his species, and I can find no reason for separating *A. spinosus* Maccl. from it, though Macleay placed the two species in different groups. In commenting on this species and *A. suturalis*, Waterhouse stated that *A. lateralis* had a single large humeral spine, whilst *A. suturalis* had two or three very small spines on the humeral angle of the elytra. Macleay remarked that he could find no such distinctive marks. From the short series of *A. lateralis* (4) and *A. suturalis* (6) before me I should say that the reverse was the case, but probably it is a variable character as one of the specimens of *A. suturalis* has two small tubercles in place of a single one.

The species is evidently very close to *A. suturalis*, but apart from the clothing may be distinguished by its shorter form and the fewer elytral tubercles, especially in the first and third rows. In *A. lateralis* there never appear to be more than 3, generally 2, tubercles in the third row, while in *A. suturalis* there are 4 and sometimes more on this row.

ACANTHOLOPHUS HUMERALIS Maccl.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 278.

♂. Large, rather strongly convex from side to side. Black, tubercles slightly reddish; densely clothed with brown decumbent pubescence, vittate with

white, a median vitta not extending down declivity, interrupted vittae between the rows of tubercles; sides of prothorax vittate above, sides of elytra maculate with white.

Head concave in front; intercrystal ridge strongly raised; supraorbital crests biramate, the posterior ramus long, curving upwards and somewhat backwards, slender and acutely pointed at apex, the anterior ramus much shorter, slender and pointed, the apex directed upwards and forwards arising in front of junction of intercrystal ridge with crest. Rostrum concave above, with a rather deep, median, foveiform depression anteriorly; lateral margins raised in an obtusely conical tubercle about middle; internal ridges low, convergent; basal foveae small. Antennae with scape somewhat flattened; funicle with first joint slightly smaller than second; club briefly pedunculate. Prothorax with median area rather deeply longitudinally impressed anteriorly, more lightly posteriorly; submedian tubercles in single series, erect, conical, the two anterior somewhat recurved, but not larger than the others, the two median the largest and somewhat more outwardly placed; lateral tubercles spiniform, the median large, acutely pointed and somewhat recurved, the anterior and posterior hardly more than spicules. Elytra elongate, subparallel, rather strongly convex transversely, punctures and granules obscured by clothing and tubercles; with three rows of strong spiniform tubercles, first row with 7, the basal ones smaller, but stout and subconical, the apical 2—3 larger and acutely spiniform; second row with 8 strong spines, larger and more acute posteriorly, extending farther down declivity than first row; humeral tubercle a large strongly recurved, outwardly projecting spine; third row with 3—4 strong spines. Ventral surface set with large, longitudinally confluent punctures, the intervals strongly raised and strigiform, more reticulate on apical segment. Intermediate tibiae with a strong subapical notch; posterior tibiae bisinuate, with a strong spur-like process projecting anteriorly at apex, somewhat recurved and bidentate. *Dimensions*: ♂, 20 × 7 mm.; ♀, 21 × 9 mm.

Hab.—Western Australia: Beverley, Ankertell.

This species cannot well be confused with any other described species; it appears to be most nearly related to *A. spinosus* Mael. and *A. suturalis* Bohem. but may be readily distinguished by the first tubercle of the submedian prothoracic row not being larger than the other tubercles of the row.

The female differs from the male in being more obese, with the elytral tubercles 6—7, 6—7, 4 in number; the venter is convex, with obsolete punctures, and the middle tibiae are not notched.

The species presents some variation in form and in the size of the tubercles. A male from Beverley is more convex and has the tubercles distinctly reddish, while the tubercle on the external rostral margin is an acute spine. Specimens from Ankertell are flatter, much less convex than the Beverley specimen, the elytral interstices are broader and the tubercles rather smaller, 7—8, 8, and 4 in the three rows, the external rostral margins are angulate but not definitely tuberculate. The female from Ankertell has a short tubercle on the rostral margins; the elytral granules are more distinct and the tubercles rather smaller, 9, 9, 4 in number. The actual types which are in the Macleay Museum are intermediate between the two extremes shown by the Beverley and Ankertell specimens.

In addition to these Western Australian specimens I have before me specimens of a form from the Mallee District, Victoria, which I am unable to separate specifically from *A. humeralis*. In view of the apparent disconnected distribution I have thought it advisable to give a varietal name to these specimens.

Var. ORIENTALIS, n. var.—♂. Smaller; clothing darker, with white vittae and macules less marked. Rostrum with a small tuberele on external margins, head and prothorax otherwise as in specimens from Ankertell; antennae with moderately long peduncle to club. Elytra with evident granules between the rows of tubereles; the tubereles smaller than in typical specimens, 8, 9, and 4 in number. Venter and legs as in typical specimens. *Dimensions*: ♂. 17 × 6.5 mm.

Hab.—Victoria: Mallee District, Lake Hattah.

ACANTHOLOPHUS CUPREOMICANS, n. sp.

♂. Large, robust, closely allied to *A. humeralis* Mael. Black; densely clothed with short subsquamose pubescence of a coppery colour with metallic lustre, the clothing sparser on prothorax; sides maculate with white, on prothorax beneath expanded margin of disc, on elytra irregularly disposed.

Head concave in front, intercrystal ridge definite, moderately low in centre; supraorbital crests stouter than in *A. humeralis*, especially the anterior ramus which projects strongly forwards at base. Rostrum somewhat shorter than in *A. humeralis*, external margins raised in a strong, conical, pointed tuberele; internal ridges low, basal foveae distinct. Antennae as in *A. humeralis*. Prothorax rather strongly produced in front; median area rather wide, parallel sided, median line lightly impressed; submedian tubereles in single series, shorter than in *A. humeralis*, subequal and set in straight line, except the basal pair which are smaller and closer together, apical tubereles somewhat cristiform; lateral margins with a long acute spine in front of middle, with a smaller one conjoined anteriorly, and two small dentiform tubereles posteriorly in the position of the posterior lateral tuberele. Elytra almost parallel-sided, less convex than in *A. humeralis*; punctures rather obscure, granules small but fairly regular; with three rows of tubereles, first with 9—10, mostly small or granuliform, the last 2 larger acute spines; second with 7—8, all acute, but the last 4 larger, slender acute spines, ending posteriorly to the tubereles of first row; humeral tuberele single, large and acute; third row with 4, all acute but decreasing in size posteriorly. Venter flattened, with large longitudinally confluent punctures, the intervals raised and strigose. Intermediate tibiae with subapical emargination, not quite as deep as in *A. humeralis*, posterior tibiae similar to *A. humeralis*.

♀. Larger, with broader elytra; clothing similar but side spots bluish; elytral tubereles smaller, 10, 8 and 4 in number; venter convex, with sculpture subsobsolete. *Dimensions*: ♂. 17.5 × 7 mm.; ♀. 19 × 8.5 mm.

Hab.—Western Australia: Mt. Barker, Parkerville. Described from 4 specimens, two males in the collection of the Australian Museum, and two females received from Mr. J. Clark, from Parkerville.

Closely allied to *A. humeralis* Mael., the present species, apart from clothing, differs in the stouter supraorbital crests, in the shorter rostrum with larger marginal tubereles, in the wider, parallel-sided median area of the prothorax and in the shorter elytral tubereles. The contrast in the clothing of this species as compared with that of *A. humeralis* is most marked.

Holotype male in Australian Museum, allotype female in Coll. Ferguson, paratype female in Coll. Clark.

ACANTHOLOPHUS OCELLIGER, n. sp.

♂. Size moderately large, flattened above. Densely clothed with dark brown subsetose clothing; prothorax with lateral areas clothed with cinnamon-

brown; elytra with a large round spot of cinnamon-brown on each side about the middle, and another on each side of declivity on apical tubercles of second row; sides of prothorax with a vitta of creamy squames above legs, elytra with interrupted patches of the same colour along lower border.

Head strongly concave in front, the intereristal ridge low in centre; supra-orbital crests large, broad at the base, the anterior ramus projecting forwards, the posterior and longer upwards and backwards, the crests as viewed from in front projecting strongly outwards. Rostrum rather deeply concave in front, the oblique internal ridges not conspicuous, convergent to base, but not meeting; basal foveae small, distinct; lateral margins raised about middle into a strongly projecting triangular tubercle. Antennae of moderate length and stoutness, elub elongate obovate, not with a slender peduncle. Prothorax (4.5—5 × 5.5—6 mm.) moderately broad, oenlar lobes present, not prominent; median area rather broad, the median tubercles of moderate size, the first slightly elongate, the second smaller, more rounded, the remainder, forming a row from a slightly more outward position obliquely inward towards base, conical, separate tubercles. Lateral margins with a large, strongly projecting, median tubercle conjoined and almost fused with a smaller anterior one, and with a much smaller triangular tubercle, posterior to middle constriction. Elytra (10—12 × 6—7 mm), rather flattened above, base truncate, humeral angles with a strong, outwardly projecting tubercle; punctures small, obscure, granules obscured by clothing; first row of tubercles comprising two to three small, hardly traceable tubercles and two much larger posterior ones, the last one the largest, spiniform, strongly projecting backwards and situated above summit of declivity; second row of four or five tubercles, the basal one small, the others strong, conical, outwardly projecting, the last situated on declivity, posteriorly to apical tubercle of first row; third row consisting of humeral and two other strong conical tubercles. Under surface with scattered setigerous punctures, closer and coarser on apical segment. Legs simple. *Dimensions*: ♂. 16—18 × 6—7 mm.

Hab.—Western Australia.

Described from four specimens, type in National Museum, Melbourne.

This species does not resemble any other species of *Acantholophus* with which I am acquainted, and its position in the Table is only tentative, it might with almost equal propriety have been placed among the tuberculate rather than the spinose species.

ACANTHOLOPHUS TATEI Blackb.

Blackburn, Report Horn Exped., 1896, p. 292.

During a recent short residence in London, I was able to examine the type of *A. tatei* Blackb., and to compare it with a cotype (♀) of *A. tennantensis* Ferg. Apart from some difference in the shape and development of the supra-orbital crests, the two species are absolutely identical. The differences as noted below are, however, quite evident when comparing the crests of the two forms, and there are at least two other forms before me which show other differences mainly in the crests. While giving names to these different forms, I would regard them in the light of varieties or geographical races rather than as distinct species.

All the various forms agree in the slight excavation of the dorsal surface of the rostrum, in the tubercles of the median prothoracic rows being conical and set in single series, in having the two anterior lateral tubercles more or less conjoin-

ed, the hinder of the two long and spiniform, in the reduction of the posterior lateral tubercle to a short conical spine or granule, and in the small degree of development of the elytral spines.

A. *TATEI* Blackb.—Rostrum with lateral margins raised in a slight angle anteriorly; supraorbital crests strongly developed, the anterior ramus projecting forwards and suddenly turned up at apex, the posterior projecting upwards and backwards, then suddenly bent backwards to apex.

Hab.—Central Australia: Charlotte Waters.

Var. *TENNANTENSIS* Ferg.—Rostrum as in *tatei*; supraorbital crests shorter, the rami short and rather stumpy, the posterior somewhat the longer, not suddenly bent backwards at apex.

Hab.—Central Australia: Tennants Creek; N. Territory: Alexandra.

Var. *MURCHISONI*, n. var.—Larger than *A. tatei*, rostrum slightly longer, external margins not raised, and very obtusely angulate; crests well developed, the rami strong, the posterior much the longer, evenly curved upwards and backwards to apex. Antennae with first joint of funicle longer than second, all joints, noticeably the first and second, longer than corresponding joints in *tennantensis*. Elytra more elongate, but sculpture as in *tennantensis*. *Dimensions*: ♂. 17 × 7 mm.; ♀. 18 × 8 mm.

Hab.—Western Australia: Ankertell (H. W. Brown).

This form might perhaps be granted specific rank, on account of the differences in the rostrum and antennae.

All the above forms have very similar clothing; the upper surface is densely covered with sandy or yellowish-brown, narrow, decumbent subpubescence, with traces of white vittae on prothorax and maculae on elytra; the sides of prothorax and lower margins of sides of elytra are densely clothed with white flattened squames.

Var. *ARUNTARUM*, n. var.—♂. more sparsely clothed with shorter pubescence, more evidently maculate with white on elytra and sides.

Rostrum rather deeply excavate above, the sides raised anteriorly into an acute angle. Supraorbital crests similar to *murchisoni*, but smaller and more slender. Antennae with first two joints of funicle longer than in *tennantensis*, but shorter than in *murchisoni*, the whole antenna rather more slender. Elytra with spines rather larger and more closely set.

♀. Differs also from ♀ of *tennantensis* and *murchisoni* in having no tubercles on the second interstice. *Dimensions*: ♂. 14.5 × 5.5 mm.; ♀. 16 × 7 mm.

Hab.—Central Australia: Aliee Springs.

Types in National Museum, Melbourne.

This form should also perhaps be given specific rank, but it cannot be regarded as conspecific with *murchisoni* except by regarding both as varieties of *tatei*. The difference in the rostrum is alone sufficient to distinguish them; the supraorbital crests in *aruntarum* show much less outward inclination, when viewed from in front, than they do in *murchisoni*.

ACANTHOLOPIUS TRAGOCEPHALUS, n. sp.

♂. Small, elongate, narrow. Black; densely clothed with cinnamon brown subpubescence, with a narrow median vitta and interrupted vittae along the inner sides of the rows of tubercles on the elytra of a lighter colour; sides of prothorax and lower border of sides of elytra with white squames; ventral surface with sandy, almost golden, squames, thickly but somewhat irregularly disposed.

Rostrum short, shallowly concave above in front, external margins feebly angulate anteriorly; oblique internal ridges united to form a median carina, running up on to intercrystal ridge. Head concave behind crests; supraocular crests single, strong, projecting upwards and arched somewhat backwards to apex, the two crests almost joined at base, as viewed from in front, without much outward inclination. Antennae with scape long, slightly curved, moderately stout and of uniform thickness; funicle with first two joints subequal, of moderate length; club not pedunculate. Prothorax (3×4 mm.) much as in *A. tatei*; anterior margin slightly produced above, with moderately distinct ocellar lobes; median line deeply impressed; with a row of tubercles on each side of median area, prominent, spiniform, about 6 in number, arranged in single series, the two rows slightly farther apart in middle than at apex or base, apical two tubercles smaller and conjoined at base; lateral margins with a large, acute, outwardly projecting spine, with the apex slightly curved backwards in front of middle, a small conjoined spine at the base of this anteriorly, and a small dentiform tubercle posterior to middle. Elytra (8.5×5 mm.) gently rounded on sides; punctures shallow, obscured by clothing, with rows of little evident granules on the interstices between the three rows of tubercles; first row of tubercles with 12, the basal ones small and mere granules, the last 3—4 becoming larger and spiniform, one or two granules present on declivity; second row with 10, the basal 7 small, but conical, the last 3—4 acutely spiniform, reaching a more posterior level than first row; third row with large humeral and subhumeral spines, the latter the larger; followed by 3 much smaller spines, the row degenerating into mere granules. Under surface with punctures obscured by clothing, the last segment apparently rugosely punctured. Legs simple. *Dimensions*: ♂, 13×5 mm.

Hab.—Western Australia: Onslow.

Apart from the single crests, this species differs from *A. tatei* and its variations in its smaller size and smaller elytral tubercles. Two specimens from Onslow and Ashburton R., in the National Museum, may represent a variety: they differ in having the anterior ramus of the supraorbital crests represented by a short spicule, the crests are also not conjoined at base; the ventral surface is destitute of clothing, and the punctures are obsolete and only rugose at extreme apex. Another specimen (♂) from Cue, has the anterior ramus present, but arising rather nearer the base, and the crest as a whole rather shorter and stouter; the ventral surface has the apical segment strongly strigose.

The material available is not enough to decide whether these specimens represent different species, varieties or merely individual variations.

A specimen from Middalya, in the National Museum, possibly represents a different species. It is a ♂, and has the supraorbital crests single and conjoined at base, but differs in its darker clothing, maculate with white and in the evidently larger elytral tubercles.

ACANTHOLOPHUS SIMPLEX Pascoe.

Pascoe, Journ. Linn. Soc., Zool., xii., 1873, p. 7.

While in London the type of this species was examined, and the following notes made.

♂. Head spines (*i.e.*, supraorbital crests), widely separated at base, single, short, acute, a slight indication of anterior branch right at base. Prothoracic spines small, abraded, granuliform, not in a straight line; lateral spine small, but acute, posterior lateral spine almost obsolete. Elytra with rows of granules and a few



small spines about declivity on third and fifth interstices and one or two about shoulder. Intermediate tibiae notched.

Hab.—Western Australia: Nicoll Bay.

In my collection are two females which have been compared with the type, on which a more detailed description has been based.

♀. Moderately densely clothed with small sandy squames, maculate on elytra with larger white squames and with white vittae along inner sides of the second and third rows of tubercles; sides extensively clothed with white squames and vittate along lower border. Rostrum shallowly excavate, sides obtusely angulate in front. Head with raised intercrystal ridge, supraorbital crests widely separated, consisting of a single, upward, and slightly backwardly directed spine with a short, spicule-like, anterior ramus. Antennae with first joint of funicle longer than second, and both rather short. Prothorax with the median tubercles on each side small, hardly conical, not in a straight line, the central ones more outwardly placed; median area raised with a few scattered granules; lateral margins with a spiniform tubercle in front of middle, with a small one at base, anteriorly; posterior lateral tubercle reduced to a small granule. Elytra with tubercles much reduced in size, on greater portion of interstices mere granules, hardly distinguishable from the granules of the other alternate interstices; first row with only 2—3 spines posteriorly, the penultimate the largest; second row with 4 posteriorly; third with small humeral and smaller infrahumeral tubercles, the rest mere granules. Venter rather densely clothed with yellow decumbent setae, and with white squames at sides, apical segment not strigose. *Dimensions*: ♀. 15 × 6 mm.

Hab.—Western Australia: Condon (H. M. Giles).

This species can be readily separated from its congeners, *A. tragocephalus* and allies, by the prothoracic tubercles being smaller and the central ones more outwardly placed. According to my notes, the male has the middle tibiae notched subapically, though the other species of the *tatei* group have the tibiae simple.

ACANTHOLOPHUS AUREOLUS Bohem.

Bohemann, Schönh. Gen. Spec. Curc., vii. (1), 1843, p. 79; Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 272; *A. rugiceps*, MacL., *op. cit.*, 1866, p. 328.

♂. Rather small; black, more or less densely clothed with brown subpubescence, maculate with grey.

Head concave in front, obliquely and rather indistinctly longitudinally rugose, with two obscure granules, sometimes absent, about middle; head separated from rostrum above by a transverse groove; supraorbital crests single, projecting upwards and pointed at apex. Rostrum concave above, with a distinct median carina; external margins moderately raised, with a distinct tubercle anteriorly; internal ridges slightly raised. Antennae with scape distinctly curved, somewhat bisinuate; funicle with second joint much longer than first; club elongate, pedunculate. Prothorax flattened or feebly concave; anterior margin subtruncate, not produced over head, ocular lobes absent; disc closely set with granules, the submedian tubercles hardly distinct from the granules; lateral tubercles strong, triangular, the median the largest, the anterior tubercle somewhat smaller, conjoined with median at base, the posterior tubercle smaller than median, acute, with a small tubercle at base anteriorly, and a granule posteriorly. Elytra emarginate and separately mucronate at apex; with rows of evident punctures and

moderately distinct granules; suture with a pair of small, closely placed spicules below summit of posterior declivity; three rows of acute spiniform tubercles, first row about 8, the basal ones small and noduliform, the last two acute and spiniform; second row 6—7, strong spiniform tubercles, extending almost to base and reaching a lower level on declivity than first row; humeral tubercle small, but distinct; third row represented by a single large tubercle followed by a row of 3—4 granules. Venter moderately closely set with rather long, decumbent, yellow setae. Legs simple.

♀. Similar, but larger and broader, more produced at apex and strongly mucronate. Head with rugae more marked, separated by deep impressions. Prothorax similar. Elytra with granules more distinct; tubercles smaller, first row with granules on basal portion, not distinct from granules of disc, the last 3—4 distinct tubercles, becoming progressively larger; second with 7 distinct spines; humeral angle with a row of 3 tubercles; the posterior the largest and in line with second row. Venter convex. *Dimensions*: ♂. 14 × 5 mm.; ♀. 17 × 7 mm.

Hab.—Western Australia: King George Sound.

I do not think that there can be any doubt that the present species is *A. aureolus* Bohem., under which name it has long been known in Australian collections. But it is by no means certain that it should not bear the name *A. echinatus*. A specimen in the Muséum d' Histoire Naturelle, Paris, is labelled as being the type of *A. echinatus*. The question as to the author of this species and as to the validity of the name as applied to the present species is discussed elsewhere. Until further information is available I prefer to retain the well known name of *A. aureolus*.

The specimens of *A. rugiceps* Macl., which are in the Australian Museum certainly belong to the same species.

With the exception, of *A. nasicornis* Pasc., which I regard as a variety, the present species can hardly be confused with any known form. In his grouping of the genus Macleay placed *aureolus* and *rugiceps* in his first section and second group along with 4 other species all differing widely *inter se*, and with none of which *A. aureolus* has much in common. It appears to be most nearly related to *A. crenaticollis* Macl., but besides the marked differences in the supraorbital crests, that species lacks the strong, spiniform, elytral tubercles.

A male from Esperance in my collection differs somewhat from the description given above, which is founded on specimens from King George Sound.

The median dorsal line of the rostrum is impressed, not carinate; the prothorax is more distinctly concave; the elytra lack the small conjoined spicules on the suture, and the venter is somewhat sparsely clothed with white subsquamose setae. The differences hardly seem sufficient to warrant giving even a varietal name to the specimen.

Var. *NASICORNIS* Pasc. Journ. Linn. Soc., Zool., xii., 1873, p. 6.

♀. Closely related to *A. aureolus* Bohem., but larger.

Head similar; supraorbital crests double, the anterior portion closely applied to posterior, varying in length, sometimes appearing as a short spicule at base, sometimes as long as posterior portion, the two only being separate at apex; transverse sulcus between head and rostrum continued up on inner side of crest between the two portions. Prothorax similar. Elytra without the conjoined sutural spicules on declivity; tubercles more numerous, about 10 in number on second row. Venter with white subsquamose clothing, sparse in middle, denser at sides and apex. *Dimensions*: ♀. 18 × 7 mm.

Hab.—Western Australia: Geraldton.

I have examined the type of *A. nasicornis*, which is a female, and have 3 ♀ in my possession, one of which was compared with the type; the other two are from Geraldton and were kindly given me by Mr. J. Clark.

I can only regard *A. nasicornis* as a variety or geographical race of *A. aureolus* Bohem.: possibly, however, the males may prove more distinct.

ACANTHOLOPHUS CRENATICOLLIS Mael.

Macleay, Trans. Ent. Soc. N.S. Wales, i. 1865, p. 289; *A. irroratus*, Mael., *op. cit.*, p. 328. (1866).

♂. Size moderate; black, rather densely clothed with brown subsquamose clothing, variegated with grey.

Head concave above, with a pair of small granules about middle; separated from rostrum by a transverse groove, running on to inner surface of crests; the latter broad, tridentate, the anterior lobe strongly convex anteriorly, only separated from median by a slight indentation, often absent, at apex, the median separated from posterior by a deeper notch, the latter longer and more slender, slightly recurved. Rostrum broadly concave above, lightly impressed in median line; external margins with a single acute tubercle projecting forwards; internal ridges and foveae obsolete. Antennae rather long, second joint noticeably longer than first; club elongate, pedunculate. Prothorax, broad, flat or feebly concave, apex truncate above, ocular lobes absent; median line impressed; disc set with small, rather obscure granules, submedian tubercles not distinct from the granules, excepting the basal and sometimes the subbasal pair; lateral strongly projecting, trianguliform, the median the largest, slightly recurved, with a smaller one anteriorly, only conjoined at base, posterior slightly smaller than median, with a smaller tubercle more posteriorly. Elytra subparallel on sides for greater part of length; punctures indefinite, transversely confluent; all the interstices with rows of granules, larger on the alternate interstices, distinctly conical on the first, third and fifth posteriorly; humeral angles not advanced, with a row of small granules. Venter flat, moderately closely set with small, grey, decumbent, subsquamose setae, arising from rather large, foveiform punctures, less marked on apical segment. Legs simple.

♀. Similar, more ovate; elytra broader, more produced and briefly mucronate at apex, the posterior granules on first, third and fifth rows smaller and less conical; venter convex, punctures smaller. *Dimensions*: ♂, 14 × 5 mm.; ♀, 15.5 × 6 mm.

Hab.—South Australia: Port Lincoln.

The above description is drawn up from South Australian specimens in my own collection. The type of *crenaticollis* is a large female, measuring 18 × 7.5 mm.; it is stated to be from New South Wales, but I can find no difference between it and South Australian specimens and believe that the locality given is probably wrong. The species is more widely known under the synonym *A. irroratus* Mael., which was described from Port Lincoln. I am uncertain whether the types of this are in the Macleay or Australian Museum.

ACANTHOLOPHUS TERRAE-REGINAE n. sp.

Allied to *A. crenaticollis* Mael., but differing in the supraorbital crests.

♂. Black; with minute, sparse, muddy brown clothing.

Rostrum deeply concave above, the concavity practically continuous with that of forehead, separated by a transverse groove, the anterior edge of which, seen from behind, appears feebly raised; internal ridges obsolete and basal foveae obliterated; lateral margins strongly raised in an acutely angular process in the middle, sloping to base, but with a second angular projection anteriorly. Forehead deeply concave, with feeble obsolescent grooves radiating from base of rostrum; supraorbital crests erect, the apex divided into a short, obtuse, forward projecting ramus, and a longer more acute one, projecting upwards. Prothorax broad, almost flat, the median furrow well marked; median tubercles small, hardly distinct from the granules, which are present on the rest of the disc, excepting the sublateral areas; lateral tubercles outwardly projecting, rather blunt, hardly triangular, the anterior and median hardly conjoined, the postero-lateral large and followed by a smaller tubercle. Elytra with shallow indefinite punctures separated by low ridges, running on to interstices and giving derm a feebly wrinkled appearance; interstices granulate, the granules larger and more distinct on the third interstie, especially posteriorly where they are tuberculiform, and on the fifth interstie where they form a continuous row of small conical granules or tubercles, about 16 in number, running from humeral angle, which projects forwards and is lined by three of these granules, to edge of declivity; sides with interstices granulate. Ventral segments with scattered punctures bearing short decumbent setae, more numerous on apical segment. Legs simple; posterior tarsi rather short.

♀. Similar to male, broader, with more convex under surface. *Dimensions*: ♂. 15×5.5 mm.; ♀. 15×6 mm.

Hab.—Queensland: Chinchilla.

Type in Queensland Museum.

Six specimens (3 ♂, 3 ♀) under examination, from the same locality.

While closely allied to *A. crenaticollis* MacL., the present species differs in the double dentiform projection of the lateral rostral margins, in the differently shaped supraorbital crests, in the more evident prothoracic granules, and in the more evidently granulate elytral shoulders.

ACANTHOLOPHUS PLANICOLLIS Waterhouse.

Waterhouse, Trans. Ent. Soc. Lond., iii., 1854, p. 74; Lacordaire, Gen. Col., vi., 1863, p. 312, note; Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 290.

♂. Small; black, densely clothed with obscure, brownish, subsquamose pubescence.

Head concave in front, obsoletely longitudinally and obliquely rugose, with a pair of obscure granules about middle; separated from rostrum by an indistinct transverse groove, only traceable from behind; supraorbital crests broad at base, projecting laterally as much as forwards, bidentate, the anterior lobe convex forwards; hardly separated from posterior, except by a small indentation, sometimes absent, at apex of lobe, the posterior briefly pointed. Rostrum concave above; external margins raised, strongly convex, sometimes with a separate angulation anteriorly; internal ridges moderately distinct, convergent, continued almost to opposite the posterior margin of base of crests; foveae represented by an oblique groove from external margin to transverse sulcus at base of rostrum. Antennae with scape short and strongly incrassate; first and second joints of

funicle approximately equal; club stout, not pedunculate. Prothorax flat, anterior margin subtruncate above, ocular lobes absent; disc closely granulate, with a tendency to radial arrangement; median line hardly impressed; sub-median tubercles not distinct, with the exception of the basal and subbasal pairs; lateral margins strongly convex, with four or five dentiform tubercles, the median constriction rather feeble. Elytra with punctures obscure; all the interstices with rows of small granules, suture with a pair of small conical granules at edge of declivity; third and fifth with larger conical granules posteriorly, more or less separate on the third; seventh also with slightly larger granules; humeral angle with a row of small granules, extending backwards and obliquely outwards from angle. Venter flat; moderately densely clothed with long decumbent setae, mostly of a light yellowish-brown colour; punctures shallow, obscured by clothing. Legs simple.

♀. Larger and broader, otherwise much as in male; venter convex. *Dimensions*: ♂. 12.5×5 mm.; ♀. 15×6 mm.

Hab.—South Australia: Adelaide, Mt. Lofty, Victor Harbour; Victoria: Wandong Ra., Macedon, R. Plenty.

In general appearance this species closely resembles *A. denticollis*, but may be readily distinguished by the bidentate supraorbital crests, and by the simple anterior tibiae. I am indebted to Mr. J. E. Dixon for a series of Victorian specimens. The type was examined by me when in London.

ACANTHOLOPHUS DENTICOLLIS MacL.

Macleay, Trans. Ent. Soc. N.S. Wales, i., 1865, p. 282.

♂. Size rather small; black, somewhat sparsely covered with minute, muddy-brown, subsquamose clothing.

Head not distinctly concave in front, with three obscure ridges converging on rostrum; head separated from rostrum by a distinct transverse groove; supra-orbital crests single, continued back in line but at an obtuse angle with external rostral margins, and ending abruptly. Rostrum with external rostral margins raised, obtusely angulate in front and running back into supraorbital crests; median line impressed; internal ridges raised convergent to base but not meeting, basal foveae elongate. Antennae moderately long, funicle with second joint longer than first, club elongate, hardly pedunculate. Prothorax feebly convex in middle, anterior margin not produced over head, ocular lobes absent; median line rather shallowly impressed; disc closely set with round moderately large granules, submedian tubercles hardly distinct from the discal granules, except for one or two posteriorly; sides not greatly explanate, tubercles rather obtuse, the median the largest, with a smaller one conjoined anteriorly, the posterior slightly smaller than the median and followed by two smaller dentiform tubercles, an intermediate tubercle present between median and posterior, but on a lower level. Elytra with punctures fairly definite, and granules little evident; suture with a conjoined pair of granules on edge of declivity; with three rows of tubercles; first row with 8, the basal ones small and noduliform, the last 2—3 larger and somewhat obtusely conical; second row with 6—7, noduliform tubercles, the last 3 obtusely conical; humeral angle with two small nodules; third row with 5—6 small noduliform tubercles, hardly more than mere granules. Venter flat, moderately closely set with black decumbent rather short, stout setae. Legs: anterior tibiae with deep subapical notch; intermediate and posterior tibiae simple.

♀. As in ♂, but broader, and elytra more produced, with rather smaller and more numerous tubercles; venter lightly convex; anterior tibiae simple. *Dimensions*: ♂. 14 × 5.5 mm.; ♀. 15 × 6.5 mm.

Hab.—N.S. Wales; Victoria.

The above description is drawn from the types in the Macleay Museum and which were taken at Kurrajong.

I have before me specimens from various places in New South Wales and Victoria, which I certainly regard as conspecific with the types but which nevertheless show considerable variation from the types and also *inter se*. It is possible that some, at any rate, of these forms should be regarded as worthy of subspecific rank, but the series are hardly long enough to justify an opinion. In this category comes *A. serraticollis* Mael., but there is more reason to justify the separation of this form at any rate subspecifically.

These variations may be considered in some detail.

Specimens (3 ♂) from the Blue Mountains, probably from Blackheath, agree with the types.

♂. ♀. from Portland, N.S. Wales differ in the following details: Supraorbital crests larger; antennae with second funicular joint hardly longer than first; prothorax with anterior, median and intermediate lateral tubercles fused to form a tridentate ridge, the posterior tubercle smaller, and the sides rather suddenly narrowed behind it, so that the prothorax is somewhat cordate in shape; elytral tubercles 8, 7, 7 in number, the humeral angle with a single nodule.

♂. ♀. from Blackheath, Blue Mountains. Head with ridges more distinct, and rostrum with median line carinate; supraorbital crests smaller, and continued back in line with rostral margins, with hardly any angle at junction; antennae with first and second joints of funicle subequal; prothorax much as in the Portland specimens; elytral tubercles 9, 9, 5—6.

A series of 8 specimens (♂, ♀) from Mt. Kosciusko approach closely to the types; the supraorbital crests, however, show feeble evidence of bidentation; the antennae have the second joint slightly longer than the first; the prothorax is narrower, but with lateral tubercles as in the types; elytra with more evident granules, the first row of tubercles degenerated into a row of mere granules, the last 4 distinct as tubercles; second row with 8—11; shoulders with two small granules behind one another; third with 5—6, little more than granules. The females are similar to the males but the crests are more distinctly bidentate and the anterior angle of the external rostral ridge is more marked.

3 ♂ from Sydney agree with type, except that the general sculpture is somewhat coarser, and the posterior lateral tubercles of the prothorax are larger.

Specimens from Woodford (1 ♀) and Mittagong (1 ♀) agree with female type, except they are somewhat larger.

Specimens from Beechworth, Victoria (♂, ♀) agree with types, except that there is slight evidence of bidentation of the supraorbital crests.

Var.

Specimens (1 ♂, 2 ♀) from Coonabarabran have a very distinctive appearance and at first sight appear to be specifically distinct, but I am unable to find characters to justify their separation except as a variety. ♂. Larger; black, with denser brown clothing, feebly variegate with grey.

Head more deeply concave in front, with grooves more marked, crests larger. Rostrum rather deeply excavate above, with the lateral margins more raised.

Prothorax wider and flatter, with very deep anterior constriction; tubercles as in type. Elytra with tubercles more numerous, smaller, and more closely set, 12, 10 and 6 in number, granules on other interstices more evident.

♀. Differs in similar manner from ♀ type. *Dimensions*: ♂. 16 × 6 mm.; ♀. 16-18 × 7-7.5 mm.

Hab.—N.S. Wales: Coonabarabran (T. G. Sloane and Macleay Museum).

Var.—*SERRATICOLLIS* Mael., *Trans. Ent. Soc. N.S. Wales*, i., 1865, p. 282.

♂. Supraorbital crests larger, feebly bidentate. Rostrum with lateral margins more acutely angulate anteriorly; median line impressed. (Antennae broken.) Prothorax broader, the disc with much smaller granules and with the submedian tubercles more distinct; lateral margins with anterior and median tubercles almost completely conjoined, the posterior triangular, acute, with a smaller tubercle conjoined at base and another at basal angle. Elytra with punctures more obscure; tubercles 8, 9, and 5 in number in the three rows; humeral angle with a small nodule. *Dimensions*: ♂. 15 × 5.5 mm.

Hab.—N.S. Wales: Wingello, Shoalhaven River.

The broader prothorax appears to me to be the best distinguishing character of this form. The bidentate crests and the more marked angulation of the external rostral margins occur in other forms of *A. denticollis*. My specimens are from the Shoalhaven River and were given to me by Mr. W. W. Froggatt; they probably come from the upper portion of the river. The only difference between them and the type is that the prothoracic granules are more distinct.

ACANTHOLOPHUS EXIMIUS Mael.

Cubicorrhynchus eximius Macleay, *Trans. Ent. Soc. N.S. Wales*, i., 1866, p. 332; Lea, *Trans. Roy. Soc. S. Aust.*, xxxiv., 1910, p. 18.

♂. Large, elongate, subparallel. Densely clothed with brown subsquamose pubescence, maculate with grey on elytra; sides with white along middle of prothorax and maculate on elytra.

Head impressed in front, separated from rostrum by a transverse groove; with a feeble longitudinal ridge in median line, and two separate granules midway down forehead; supraorbital crests rather short and obtuse, bidentate. Rostrum widely excavate, lateral margins little raised, with a small spicule anteriorly, median line deeply impressed. Antennae long, moderately stout; funicle with basal two joints rather long, subequal; club moderately long, pedunculate. Prothorax subtruncate above, with no trace of ocular lobes; disc flattened, the median line hardly impressed, with rather distantly placed, moderately large, distinct granules, slightly larger on each side of median line, the penultimate tubercle distinct; lateral margins with a short sharp tubercle in front of middle, and another shorter one anterior to it, posterior lateral tubercle represented by a small granule. Elytra elongate, almost subparallel on sides; with fairly regular rows of small foveiform punctures, the interstices with distinct rounded granules; with three rows of tubercles, first row about 11 in number, the basal ones mere granules, slightly larger than the granules on the intermediate interstices, becoming larger posteriorly, then conical, the last 3 large and acutely conical, extending on to declivity; second row with 8-9 tubercles, larger than the tubercles of first row, the basal 6 small and obtuse, the rest conical, becoming progressively larger and more acute, not reaching so posterior a level as the first row; humeral angle with a small tubercle; third row with 5, the first moderately large and

acute, the remainder decreasing in size. Venter gently transversely convex; strongly nitid, with few obsolete setigerous punctures, more evident at sides, the extreme apex rather rugosely punctured. Legs simple.

♀. Wider; elytra more rounded on sides; venter more convex. *Dimensions*: ♂. 18×6 mm.

Hab.—Western Australia: Stirling Ranges.

The above description is taken from the specimen in the Macleay Museum which is a male; the Australian Museum specimens, presumably the types, are females; these were compared with the male some years ago and agree with it except for the usual sexual differences.

The species was originally described as a *Cubicorrhynchus*, but Lea removed it to *Acantholophus* and it certainly is congeneric with the other species placed in the second section of *Acantholophus*.

A. eximius is related most nearly to *A. scaphirostris* Ferg., but is a larger flatter insect with coarser granules.

ACANTHOLOPHUS SCAPHIROSTRIS Ferg.

Ferguson, Trans. Roy. Soc. S. Aust., xxxix., 1915, p. 73.

Though allied to *A. eximius* Mael., the present species may be distinguished by its smaller size and more convex form. The lateral prothoracic tubercles are more obtuse, and the elytral tubercles smaller, while the elytral punctures and granules are much less distinct, also the venter is not strongly nitid.

Hab.—Western Australia: Bridgetown.

ACANTHOLOPHUS GRANULATUS Sloane.

Sloane, Trans. Roy. Soc. S. Aust., xvi., 1892, p. 231.

The type of this species, now in the South Australian Museum, was examined some years ago. The male alone was known to Mr. Sloane; it came from Barrow Range, but the Museum also possessed a female from Everard Range.

The species is closely allied to *A. maximus* Mael., and certainly cannot be separated generically. The chief distinctions are in the form of the supraorbital crests and in the lateral tubercles of the prothorax. The crests are not bidentate above, the two rami being completely fused. The prothorax is flatter and the lateral tubercles are subconical and more distinct than in the normal form, though some specimens of *A. maximus* have the lateral tubercles more strongly developed. The elytral granules are duplicated on some of the interstices.

The female is broader than the male, but otherwise very similar; the crests are, however, very slightly dentate above.

ACANTHOLOPHUS BLACKBURNI Ferg.

Ferguson, Trans. Roy. Soc. S. Aust., xxxix., 1915, p. 59; *A. simplex*, Blackburn (*nom. praeocc.*), Report Horn Exped., 1896, p. 292.

This species is closely allied to *A. granulatus* Sloane and *A. maximus* Mael. Compared with the male of *A. granulatus*, the present species differs in having the supraorbital crests distinctly bidentate, the posterior dentation being the longer. The prothorax has the granules less evenly distributed and the lateral tubercles blunter; these differences may not, however, be constant, and the elytral granules

being in single rows on all the interstices perhaps affords a better distinction.

The female type in the South Australian Museum has also been examined. It differs from the male commented on above, which was from Palm Creek (National Museum) in being smaller and more ovate. The crests had smaller but distinct dentations, and the lateral prothoracic tubercles were narrower and more sharply conical.

From *A. maximus*, it may be distinguished by the arrangement of the elytral granules, but both *A. blackburni* and *A. granulatus* differ from *A. maximus* in their more slender *Acantholophus*-like form.

ACANTHOLOPHUS MAXIMUS Mael.

Cubicorrhynchus maximus Mael., Trans. Ent. Soc. N.S. Wales, i., 1865, p. 294.

♂. Of moderate size, robust. Black, with very scanty grey clothing.

Head convex above, concave in front and with longitudinal and oblique ridges converging on apex and separated by deep grooves, with two small granules about middle; separated from rostrum by a deep transverse groove bifurcate at ends; supraorbital crests stout, obtusely bidentate, the posterior fork of the transverse apical groove running up the inner side of crest between the two portions, the anterior fork running between crest and the end of the lateral margin of the rostrum. Rostrum short and wide, the upper surface rather deeply concave, without internal ridges or basal foveae; lateral margins strongly raised, almost rectangular in front and sinking suddenly at base. Antennae comparatively short; first joint of funicle noticeably longer than second; club rather stout, elongate. Prothorax subquadrate, gently rounded on sides; apical margin feebly rounded above, not produced over head, ocular lobes absent; disc gently convex, not explanate, uniformly and closely set with moderately large distinct granules; median line rather shallowly impressed, submedian tubercles absent except for small basal pair; lateral tubercles represented by two small dentiform projections anteriorly and one or two smaller more indefinite ones posteriorly. Sides granulate, the granules becoming obsolete below. Elytra broad, gently rounded on sides, base slightly emarginate, humeral angles marked by a small tooth; disc striate-punctate, the punctures open, often confluent laterally, giving elytra a somewhat wrinkled appearance; interstices closely set with moderately large granules, round at base, but conical posteriorly, for the most part in single series, but duplicated on basal portions of second, third and fourth interstices. Ventral segments transversely convex, the basal segments rather feebly concave; without evident punctures except for a few at extreme apex. Legs short and stout; femora somewhat flattened with transverse impressions; tibiae short and stout, with rather strong yellow setae, larger on the under surface; tarsal joints shorter and broader than usual.

♀. Very similar to ♂, somewhat more obese; venter more strongly convex; legs somewhat longer. *Dimensions*: ♂. 14 × 6—17 × 7 mm.; ♀. 17 × 7—20 × 8 mm.

Hab.—Western Australia: King George Sound, Swan River, Mundaring, Conjerdin, Gooseberry Hill, Kalgoorlie, Cue.

The type of this species, which is in the Macleay Museum, is a female, and agrees exactly with the female from Mundaring described above.

The series before me shows some considerable variation in size and in the lateral prothoracic tubercles. These tend to become distinctly larger, and in specimens from Cue there is an additional tubercle filling the gap between the

anterior and posterior pairs, but on a somewhat lower plane. These specimens at first sight might be regarded as belonging at least to a distinct variety, but they are connected by intermediate forms. There is also in some specimens a tendency for the second tubercle of the posterior pair to become obsolete. Comparison with *A. blackburni* shows that the two anterior tubercles and the first of the posterior pair correspond to the three tubercles present in most species; the middle tubercle in the Cuc specimens corresponds to the small granule seen at the base of the median tubercle in other species.

The position of *A. maximus* Macleay is open to considerable discussion. Macleay described it as a species of *Cubicorrhynchus* and subsequent authors have allowed it to remain in that genus. Lea regarded it as congeneric with *Molochtus gagates* Pasc., and placed the latter species under *Cubicorrhynchus*.

In its general appearance and sculpture *maximus* undoubtedly resembles both *Cubicorrhynchus* and *Molochtus*, but I cannot regard it as congeneric with either. The reasons for maintaining *Molochtus* as a valid genus I have already given and the characters laid down exclude *maximus*. From *Cubicorrhynchus* it is separated by the deep concavity of the rostrum.

I regard it as unquestionably congeneric with *Acantholophus granulatus* Sloane and *A. blackburni* Ferg. (= *A. simplex* Blackb.) though neither Sloane nor Blackburn referred to this species in their observations.

If the two latter species are allowed to remain in *Acantholophus* then *maximus* must be placed there too.